LISBON SCHOOL OF ECONOMICS & MANAGEMENT
UNIVERSIDADE DE LISBOA

MASTER OF SCIENCE IN

FINANCE

MASTERS FINAL WORK

PROJECT

EQUITY RESEARCH:

AIRBUS SE

DUARTE MARIA FILIPE CARNEIRO

OCTOBER 2020

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SUPERVISOR:

PEDRO NUNO RINO CARREIRA VIEIRA

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Abstract

The following Equity Research Report on Airbus was written in line with the research report format recommended by the CFA Institute, and it reflects the public information of the company published until 30th June 2020. Consequently, any event following this date was not considered in the analysis.

As an Aviation enthusiastic, I am glad to have chosen such an iconic Aerospace Company which I have been admiring since my childhood, when I spent several hours playing Airlines Companies simulation games.

The project starts with a business description of the Company, including an introduction to its history, a detailed analysis to each operational segment, and the strategies designed for the future. In addition, ESG is also highlighted in the present report, as the Company is investing in this area.

Moreover, an In-depth Industry analysis mentions the A&D trends, the economic outlook, the PESTEL model, and the supply and demand drivers of the Industry. The Competitive Positioning is also provided, through the SWOT analysis.

The Price Target of **€74.81** for 30th June 2021, equivalent to a +17.80% upside potential from the close price on 30th June 2020 (€63.52) was computed through the DCF model, using the Free Cash Flow to Firm (FCFF). Other valuation methods were used, including the Dividend-Discount Model (DDM), the Adjusted Present Value (APV), the Free Cash Flow to Equity (FCFE), the Relative Valuation through Peers' multiples. A Monte Carlo Simulation was performed, using the Oracle Crystal Ball software.

The present report includes sensitivity analysis to a few selected risks to the price target, namely the Commercial Aircraft production rates, the weighted average cost of capital (WACC) and the terminal growth rate (g).

Based on the 17.80% upside potential, the Leadership in the Industry, and the future projects the Company is developing for a sustainable future, my recommendation for Airbus is **BUY**.

JEL classification: F01, G10, G17, G30, G34, G35, H56, J11, L62, L64

Keywords: Equity Research, AIR.PA, Aerospace & Defense Industry, Commercial Aircraft, Military Expenditure, Helicopters, Corporate Finance, ESG, Valuation, Discounted Cash-Flow, Dividend Discount Model, Multiples.

Acknowledgements

First, I would like to offer my special thanks to my supervisor, Professor Pedro, for his valuable and constructive suggestions during the developing of this Report in such a challenging environment caused by the COVID.

Second, I would also like to thank to my former Boss, Carlos, and my former fellow worker, Inês, for all the experience and knowledge they transmitted to me during my 5-months job at Baker Tilly Portugal.

Finally, I wish to thank my parents, brother, family, and friends for being supportive during the writing of this Masters' Final Work.

Index

List of Figures

List of Tables

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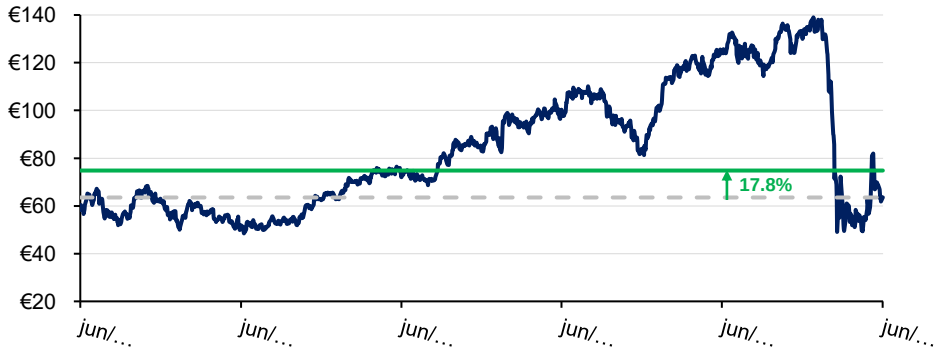
AIRBUS SE: Resilience and Eyes on the Future

Date: 30/06/2020 **Close Price:** €63.52 **Price Target:** €74.81 2021HY

Ticker: AIR.PA (Eikon Reuters) **Recommendation:** **BUY** **(17.8% Upside)** Medium-Risk

1. Research Snapshot



Market Profile	
Close Price (June 30th)	63.52 €
52-Week price range	48.12€-139.4€
Average daily volume	2,193,336
Shares Outstanding	782M
Market Cap	49.7B
Free Float	71.97%

Figure 1 - AIR market profile Source: Thomson Reuters

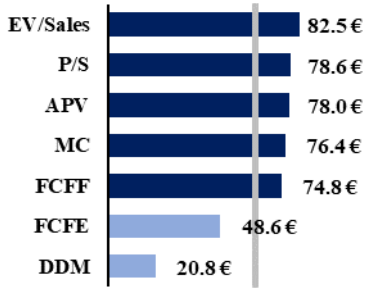


Figure 2 - AIR Price Targets

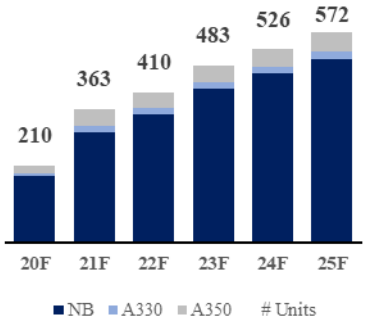


Figure 3 - Projected Annual Deliveries, in Units

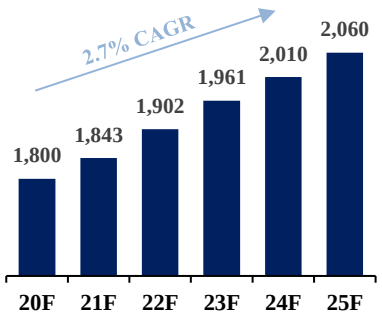


Figure 4 - Figure 4 - Global Military Spending, in Billion EUR
Source: (Research and Markets, 2020)

Based on a forecast period of 6 years (2020YE-2025YE), **Buy** is our recommendation for Airbus SE (**AIR.PA**), with a 2021HY price target of €74.81/sh, using the Discounted Cash Flow (DCF) method, implying a **17.8% upside potential** from the 30thJune 2020 closing price of €63.52/sh, with **Medium** risk. AIR is the current Global leader in the Commercial Aircraft and Helicopters production and one of the most important players in Defense segment. However, the COVID pandemic has been severely hurting AIR as the orders stopped flowing in and the production rate was slashed for the upcoming years due to the lower demand for air travel and the airliners' weak financial conditions.

Resilience. COVID has been hurting the global economy, in particular the Tourism industry. Airliners' industry has been one of the most affected as the demand for air travel registered a sharp drop since March 2020 when several countries around the world were under a mandatory lockdown and had their borders closed. Consequently, Airliners are restructuring its operations and fleet to adjust for the upcoming years projected demand. Several are phasing-out older and larger aircraft due to higher operational and maintenance costs while others have postponed or even cancelled its current orders. To adapt to the new market environment, AIR will slash 15,000 jobs around the world to save personnel costs[1].

[1] Source: (Togoh, 2020)

Eyes on the future. On 21st September 2020, AIR revealed 3 zero emissions concept aircrafts hydrogen powered which could enter service by 2035[2]. The Company aims to be carbon-neutral and this is a step to reach such goal. Also, by presenting such concept, Airbus is proving that A&D industry has the potential to significantly reduce its environmental footprint.

Narrow-Body family boosting AIR revenues: The A220 and A320 families are expected to be key revenue drivers on AIR rebound as the projections indicate that they will represent 83.3% to 90.9% of total annual production and the number of units delivered from these two families are expected to range from 82.6% to 87.5% of total commercial aircraft delivered (**Figure 3**).

Global Military Expenditures: The Global Defense Expenditures are expected to increase at 2.72% CAGR between 2020 and 2028[3]. AIR D&S and Helicopters segments are highly sensitive to this variable, as 100% and 60% of the respective segments' revenues are related to Military orders (**Figure 4**).

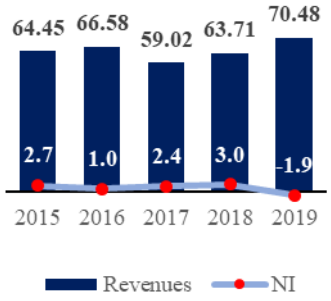


Figure 5 - AIR Historical Revenues & NI, in Billion EUR
Source: Company Annual Reports

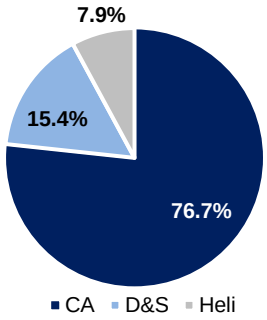


Figure 6 - AIR Segment' Revenues FY19
Source: Airbus FY19 Annual Report

2. Business Description

Airbus SE is a multinational aerospace Company headquartered in Leiden, Netherlands and is listed in the Euro Stoxx 50 market index. Airbus SE operates in three segments: Airbus Commercial Aerospace (CA), Airbus Defense & Space (D&S) and Airbus Helicopters (Heli). AIR total external Revenues in 2019YE were €70.5bn (vs €63.7bn in 2018YE). CA is the leading revenue driver representing 77% of the group total annual revenues at 2019YE (vs 74% in 2018YE), followed by D&S generation of 15% (vs 17% in 2018YE) and Heli's share of 8% (vs 9% in 2018YE). Asia-Pacific is the region with the largest share of revenues, 32% in 2019YE (vs 37% in 2018YE), followed by Europe with 32% (vs 28%) and North America with 17% (vs 17%) (**Figure 7**). Airbus SE has manufacturing plants spread in the EU, North America, and China. Airbus' shares are exclusively traded in France, Germany, and Spain.

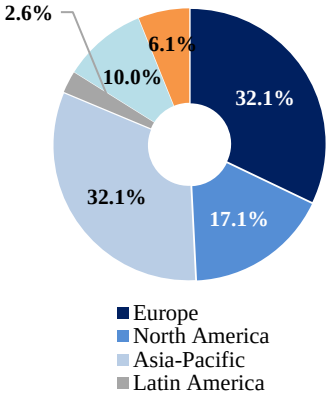


Figure 7 - Revenues by Geography
Source: Thomson Reuters Eikon

Airbus (Commercial Aircraft)

AIR current **portfolio** is composed by **five types of aircraft families**, 2 of them are Narrow-Body (**NB**) (A220, A320 families) and the remaining 3 are Wide-Body (**WB**) (A330, A350 and A380 families). NB aircrafts are the smaller ones, with a single-aisle and are intended for short-to-medium haul flights. WB aircrafts are the larger ones, with multi-aisle and are intended for transcontinental flights. Recently, Airbus launched the neo (New Engine Option) version on some of the best-selling aircraft, such as the A320/A321 and the A330. The **neo version brings several benefits** for the carriers and for its customers[4]: the

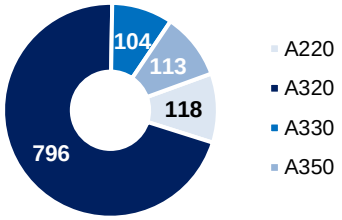


Figure 8 - Airbus Gross Orders FY19, in units
Source: Airbus FY19 Annual Report

[2] Source: (Airbus, 2020)
[3] According to (Research and Markets, 2020)
[4] Source: (Hayden-Lefebvre, 2019)

introduction of new and more fuel-efficient engines as well as the aerodynamic improvements on wings; new and updated software systems and security mechanisms; more available seats per aircraft; maintenance savings (>90% of the structure remains the same as the ceo generation); the introduction of the Airspace cabin and the redesign of the crew compartments.

According to the **2019 Annual Report**, **NB aircrafts represent 88%** (vs 86% in 2018YE) of the total number of orders and the trend is to increase its revenue share, due to recent development of Low-Cost Carriers (LCC) and the fleet renovation of some of the European and American flag carriers. The launch of Long-Ranged NB aircrafts is an authentical game-changer as several carriers now consider this aircraft for long-haul flights in routes where it would not be profitable with a WB aircraft. Despite having less seats, it consumes less 50% fuel for the same route, so it can be used to that kind of destinations.

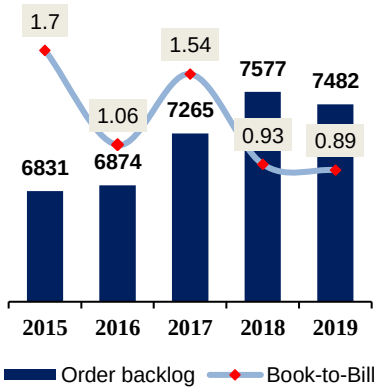


Figure 9 - Order Backlog, in units, and Book-to-Bill
Source: Company data

WB aircrafts represent 12% (vs 14% in 2018YE) of AIR's CA revenues. There is a downward trend in the order backlog of WB aircraft which started a few years ago due to launch of the Long-Range NB aircraft. The discontinuation of the A380 model is a key moment for the industry, as the idea of "Jumbos" and four-engine aircrafts is about to end due to their high fuel consumption and expensive maintenance costs. Airliners are replacing these by smaller aircraft such as the twin-engine A350 due to their efficiency and versatility.

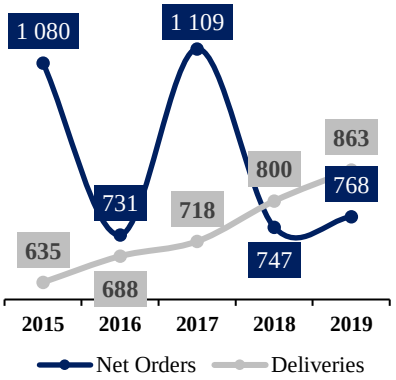


Figure 10 - Net Orders vs Deliveries, in units
Source: Company data

Airbus also **produces Corporate Jets and Freighter aircraft**, but their shares of revenues are **marginal**. In Jan 2020, the Beluga XL entered in service to replace its predecessor, the BelugaST. This aircraft is an integral part of Airbus' industrial system and a key enabler for production ramp-up requirements beyond 2019YE. The BelugaXL was conceived solely for internal operations and provides 30% extra transport capacity being seven meters longer and one meter wider than the previous generation and it will make a difference in terms of efficiency in Airbus' operations.

This segment offers a wide range of specialized customer services, such as Maintenance, Repair and Overhaul (**MRO**), Upgrade, Flight Operations and Training services. AIR considers vital to establish a good after-sales relationship with its customers, and that includes offering these services. AIR has a 24/7 Support Worldwide, AIRTAC, for all aircraft-on-ground matters. Concerning **Upgrade services**, AIR offers three options: Cabin Upgrade, System Airframe, or Interiors Services. AIR counts with 8 training centers across the world: 2 in Europe, 3 in North America and 3 in Asia; These trainings provide solutions to ensure safe, reliable and economically-efficient operations on all aircraft throughout their lifecycle and are developed for pilots, cabin crews, performance and operations engineers, maintenance personnel, and other specialists.
In 2019YE, 94% of external revenues came from Platforms and the remaining 6% from provided Services.

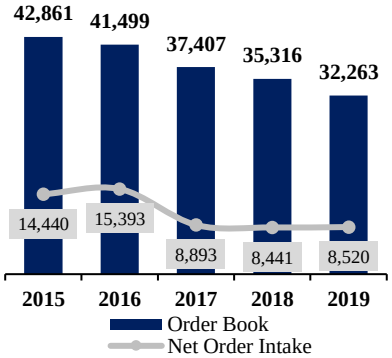


Figure 11 - D&S Order Backlog, in million EUR
Source: Company Data

Airbus Defense and Space (D&S)

Airbus is the **largest Defense supplier in Europe**, and it is among the top 10 Defense companies worldwide. Its conventional Defense aircraft portfolio is composed by 5 models: A400M, C295, CN235, A330MRTT and Eurofighter Typhoon. In addition, Airbus is developing new Defense weaponry, the Unmanned Aircraft Services (UAS), to face the overcoming challenges. Besides, the Company offers a wide range of other type of important instruments related to Defense, such as providing cybersecurity services, secure communications services to governments and military forces and other security solutions to its customers.

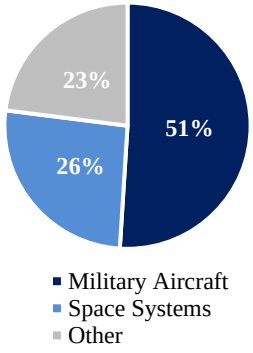


Figure 12 - D&S External Revenue Split
Source: Company Data

Airbus' investments in the Space Industry enabled it to supply reliable systems that range from electronic components to full telecommunications relay platforms and scientific satellites. An unequivocal fact that proves this investment is the 50/50 Joint Venture (JV) between Airbus and Safran called "Ariane Group" that was finalized in 2016. Its mission is to boost the European Space Industry.

This branch also provides several services, such as Material, MRO, and Global Upgrades (MM&G), Training & Flight operations, Performance-based services, and a Customer Support.

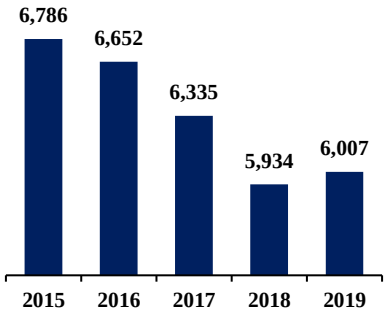


Figure 13 - Heli External Revenues, million EUR
Source: Company Data

Since FY15, the Order Book has decreased at a 6.9% CAGR, from 42,861 thousand EUR to 32,263 thousand EUR in FY19. Moreover, in the same period the D&S segment Net Order intake has declined at a 12.4% CAGR, from 14,440 thousand EUR to 8.520 thousand EUR (**Figure 11**).

In 2019YE, Platforms represented 68% of the external revenues and Services the remaining 32%. Additionally, the external revenue split was the following: Military aircraft represented 51% of the revenues, Space Systems 26% and the Connected Intelligence & Other the remaining 22% (**Figure 12**).

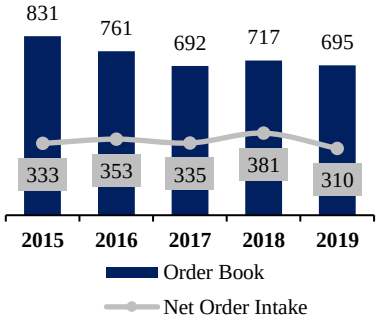


Figure 14 - Heli Order Book, in Units
Source: Company Data

Airbus Helicopters

Airbus is the **world's No.1 helicopter manufacturer**[5] and displays a portfolio both for civilian and military purposes. Airbus' range of civil helicopters is designed for multiple purposes, including emergency medical services, offshore energy, commercial air transport among several other activities.

The civil helicopter portfolio is composed by **five different classes**: intermediate single (with two models, H125 and H130), Light Twin (H135 and H145), Medium Twin (AS365 N3+, H155 and H160), Super Medium (H175) and Heavy (H215 and H225). Airbus' military helicopters are equipped with cutting-edge technology and are designed for armed scout, utility, attack, naval, maritime, and special operations. As in the civilian branch, the military portfolio has more than one class, based on the respective size and capacity: a light class, composed by three models (H125M, H135M and H145M), medium class (AS 565 MBe and

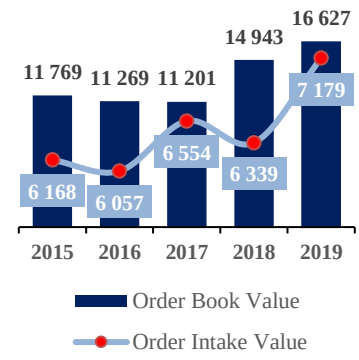


Figure 15 - Heli Order Book Value
Source: Company data

[5] According to (Airbus, 2020).

H160M), heavy class (H215M and H225M), and the specialized class (the famous "Tiger" and the NH90). Helicopters offers several services to its customers after the deliveries: one of those is **HCare**, a 24/7 Technical Support. It also offers MRO services, training, and flight operations.

In 2019YE, 45% of its revenues came from civilian orders and the remaining 55% came from the military orders. Also, 57% of the 2019YE external revenues came from Platforms and the 43% came from provided services. The order book, in units, declined from 717 in 2018YE to 695 in 2019YE, a -3.1% YoY variation (**Figure 14**). However, in terms of value, the order book value increased from €14,943m in 2018YE to €16,627m in 2019YE, a +11.3%YoY growth (**Figure 15**).

Company Strategies

Grow Airbus as an Aerospace leader, leveraging its European roots while pursuing a global vision through local actions: The number of delivered aircrafts is in an upward trend; The launching process of the Airbus A321XLR was a success in terms of orders; Large R&D investments in Airbus D&S to develop a New Generation Fighter (NGF), Remote Carriers (RC) and an Air Combat Cloud (ACC); Airbus Helicopters is the market leader and is developing new products.

Increase Airbus capacity for the future and in a highly uncertain, regulated, and competitive environment through the right combination of growth, profitability, and resilience. Due to the fast-changing environment in which Airbus operates, a strong financial strength is key to ensure an optimization in its future investments. Airbus needs to continue its growth, improve its profitability, and strengthen its capacity to withstand external and internal events. Boosting leadership in all A&D domains through the continued ramp-up of production, the development of new commercial and governmental products and systems, as well as services will secure the Company's organic growth. In addition, opportunities for mergers and acquisitions are considered in selected value chain areas to strengthen the market position and secure competitive advantages. Airbus focuses on the continuous improvement of margins of aircraft programs, product competitiveness, and is strengthening its Services and Digital businesses to increase its profitability.[6]

Lead the transformation of the A&D industry to meet the emerging ESG standards.

These three strategies are supported by 10 enablers, which can be seen in **Appendix 10**.

[6] The mentioned information is available in Airbus' 2019 Annual Report and 2019 Board of Directors Report.

3. Management and Corporate Governance

Environment, Social and Governance (ESG)

Airbus is a front-runner in what concerns to ESG. In 2018, E&Y assigned the Airbus' **ESG score of (A-)**: Airbus' environmental pillar weights 23.7% of the total, social pillar weights 43.9% and governance pillar weights the remaining 32,4%. The respective scores were (A+), (A) and (B), where (A+) is the highest score and (D-) is the lowest. A more detailed analysis towards ESG practices can be seen in **Appendix 11**.

Committed to responsible practices within daily business life as well as to the UN SDGs (Sustainable Development Goals). Airbus is committed to 8 of the SDGs (**Table 1**).

#	AIR UN SDGs
4	Quality education
5	Gender equality
8	Decent work & economic growth
9	Industry, Innovation and Infrastructure
12	Responsible Consumption and Production
13	Climate Action
16	Peace, Justice and Strong Institutions
17	Partnerships for the goals

Table 1 - Committed UN SDGs
Source: BoD 2019 Annual Report

Governance

Airbus follows the **Anglo-Saxon** corporate governance model where shareholders in attendance at the General Meeting elect the Board of Directors for a three years' term. The current cycle started in the beginning of 2020 and will finish by 2022YE. AIR is guided by the Dutch Corporate Governance Code ("Dutch Code"). AIR top-level governing body is the Board of Directors (**BoD**).

#	Description
1	**Antecipation**
2	**Speak-up & Early Warnings**
3	**Robust risk Mitigations & Opportuinities**
4	**Strong Governance**

Table 2 - ERM Axes
Source: BoD 2019 Annual Report

Shareholder Structure:

AIR has 3 European National Governments has Shareholders, being the French and the Germanic the main ones, each with ~11% of total shares outstanding. The Free Float is ~71% of the outstanding shares in the market (**Figure 16**).

Committee	# Members
Audit	5 (Chair + 4 Indep.)
RNGC	4 (Chair + 3 Indep.)
E&C	4 (Chair + 3 Indep.)

Table 3 - Number of Members per Committee
Source: Company website

Board of Directors:

The BoD must have at the most 12 members, 1 executive and 11 non-executives, appointed and removed at the shareholders' meeting. Among its duties there is the overall conduct of the company, the management, direction and performance of the company and its business. Its function is to delegate the day-to-day management of the Company to the CEO who, supported by the Executive Committee, makes decisions with respect to the management of the company.

Among the requirements to enter the BoD, the AIR code states that the indicated CEO must be an EU national and resident, while 9 of the 11 non-executive directors must be "Independent Directors", including the chairman of the BoD.

In 2019YE, the average age of the members of the BoD was 59 years. Additionally, according to the 2019 Annual BoD report, it must have at least 25% female representation.

The BoD follows closely the Enterprise Risk Management System (**ERM**) which is a crucial mechanism for both mitigating the risks faced by the Company and identifying future opportunities. The ERM system is articulated along four axes (**Table 2**).

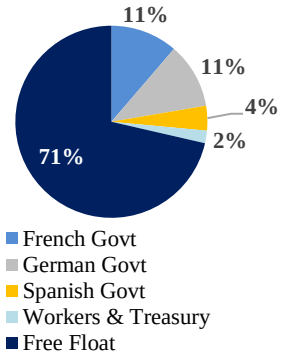


Figure 16 - Simplified Shareholder Structure
Source: Thomson Reuters

Airbus BoD's Committees (Table 3)

Audit Committee: makes recommendations on the approval of the Financial Statements, supports the BoD in the appointment of external auditors and ensures that audit activities are correctly managed.

Remuneration, Nomination and Governance Committees: makes recommendations to the board for major appointments within the company. The RNGC considers the continuity of company-specific knowledge and experience within the BoD, although a Member should at the time of his/her appointment or re-appointment not be older than 75 years and ensuring that at least one third of Directors' positions are either renewed or replaced every year for a term of three years.

Ethics and Compliance Committee: assists the BoD in overseeing Airbus' culture and commitment to ethical business and integrity. The E&C Committee makes recommendations to the BoD and its Committees on all ethics and compliance-related matters and is responsible for providing to the Audit Committee any necessary disclosures on issues or alleged ethical and compliance breaches that are financial and accounting-related.

Remuneration

In terms of remuneration (**Table 4**), the CEO's total direct compensation (**TDC**) comprises a base remuneration (**Base Salary**), an annual variable short-term remuneration (**VR**) and a long-term Incentive plan (**LTIP**). According to a rule established by the BoD, the **CEO is expected to acquire Airbus shares with a value equal to 200% of the Base Salary** and to hold them throughout its tenure. As of 31st December 2019, the AIR's CEO Guillaume Faury owned 8,407 AIR shares. The CEO is entitled to retirement benefit.

Independent Directors are entitled to receive a **base fee** for membership or Chair of the Board, a Committee fee for membership or chair on each of the Board's Committees and an attendance fee for the attendance of Board meetings. They **do not receive any performance or equity-related compensation** and do not accrue pension rights with the Company, except in case of being current or past executive directors.

Critique to management and board:

As the Board of Directors is composed by **11 independent directors and 1 executive director (Table 5)**, all of them **elected in a General Meeting**, which confers a high degree of transparency to this Governance model. All the Directors have a strong background in their areas of expertise that will certainly provide critical insights to enhance the management quality of the company.

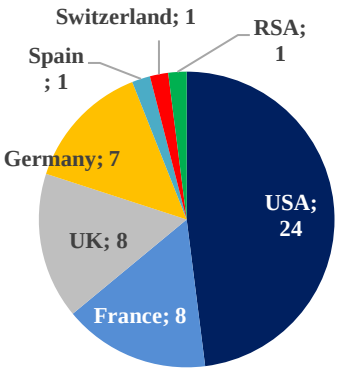


Figure 17 - AIR Top50 Shareholders by Nationality
Source: Thomson Reuters

Remun. element	Main Driver
Base Salary	Reflects Mkt value of position
VR	Rewards annual performance based on goals
LTIP	Rewards LT commitment and Company performance, and engagement on financial targets to cumulative performance over a 3-year period

Table 4 - CEO Remuneration
Source: 2019 Annual BoD report

Board of Directors	
Name	**Indep.?**
Guillaume Faury (CEO)	No
Denis Ranque (Chairman)	Yes
Victor Chu	Yes
Jean-Pierre Clamadieu	Yes
Ralph D. Crosby, Jr.	Yes
Lord Drayson	Yes
Catherine Guillouard	Yes
Hermann-Josef Lamberti	Yes
Maria A. M. Martínez	Yes
Calaudia Nemat	Yes
René Obermann	Yes
Carlos Tavares	Yes

Table 5 - BoD members
Source: Company data

4. Industry Overview and Competitive Positioning

The Aerospace & Defense (A&D) industry serves two main markets: **Aerospace and Defense**.

Aerospace comprises the designing, manufacturing, sale and service process of commercial aircraft, business jets, helicopters, unmanned aerial vehicles (UAVs), and their subsystems and components. This is a **highly concentrated** segment as it is dominated by two key players, Boeing Co., and Airbus SE, having 90% of market share combined (**Figure 18**). These OEMs can only ramp-up their production due to their efficient supply chain process, composed by thousands of small and medium-sized suppliers.

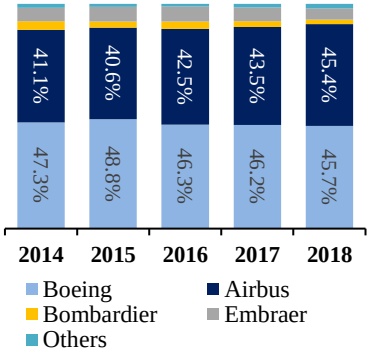


Figure 18 - CA Market Share
Source: Thomson Reuters

Since 2015, there has been a strong M&A activity in this field and two good examples are the Airbus acquisition of Bombardier's commercial aircraft business[7] and the almost-concluded acquisition of Embraer SA by Boeing Co[8], which recently was cancelled[9]. Both Bombardier and Embraer are the two biggest OEMs of smaller jet aircraft produced for regional flights. **Before the COVID-19 pandemic**, the average traffic growth was expected to grow at **4.3% CAGR** and the demand for 39,210 passenger and freight aircraft until 2038. However, until May 2020 several airliners postponed or even cancelled their aircraft orders with OEMS, due to the overall uncertainty climate around the COVID pandemic and a fragile liquidity, as the demand for air travel had a significant decrease over the last 3 months.

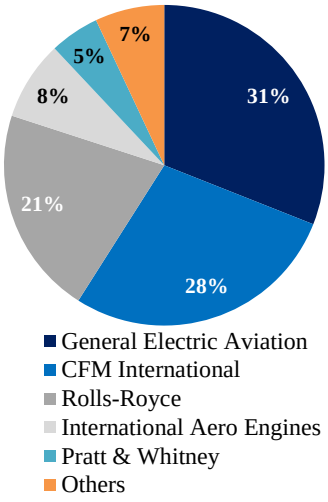


Figure 19 - AEM Market Share (in %)
Source: (Aviation Week, 2020)

The **Defense** market comprises the production of military aircraft and ground equipment, the development of IT and Space Systems. It can be described as an **Oligopolist** industry, as there are a few players with a relevant market share. The military expenditures have been increasing. The main customers of Defense products are sovereign governments, in particular the U.S. Government, so it is highly sensitive to military expenditures. Due to its broad dimension, there are several players that focus exclusively on the manufacturing of military equipment or on IT systems. Global Defense expenditure is expected to grow at **3% CAGR** until 2028 to reach $2.1Trillion (**Figure 4**).

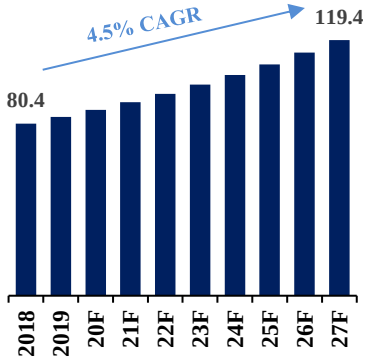


Figure 20 - MRO projected Revenues, in Billion USD
Source: (Oliver Wyman, 2017)

Aircraft Engine Manufacturers (AEMs) are vital in this industry due to its key function of design and produce aircrafts' engines. The aircraft engines' conception takes a long period of time and requires a costly development program while it is also subject to numerous tests to achieve all the required

[7] On 13th February 2020, Airbus and the Government of Québec became owners of Bombardier's commercial aircraft business by $591Mil. Source: (Garcia, 2020)

[8] Boeing is about to acquire Embraer SA, but this business is being analyzed by EU regulators that are concerned that the deal would reduce the competition in the aircraft manufacturing market. Source: (Finlay, 2019)

[9] Boeing pulled out of the deal, due to the COVID situation. Source: (Reuters, 2020)

certifications. Currently, AEMs produce customized engines for each new aircraft model, which will enhance an optimization of flight performance. However, the development program of such new and customized engines might take longer than expected and exceed budget. The largest AEM are General Electric (**GE**), Rolls-Royce (**RR**), Pratt & Whitney (**P&W**) and **Safran**. Currently, General Electric Aviation, part of GE conglomerate, has the largest market share of turbofan engine market followed by Rolls-Royce and P&W (**Figure 19**).

Maintenance, Repair and Overhaul (MRO) services

As the number of new aircraft deliveries has been increasing over the last decade at a 4.85% CAGR since 2010 until FY18, MRO industry will need to meet this increasing demand, as all aircraft need those services to maintain operations. Additionally, the MRO industry will have to adjust to the new-generation aircraft, as they include new construction materials as well as new data collection and measurement tools designed to provide advanced prognostication capability. MRO services revenues reached 80.4$ Billion in FY18 and are expected to reach 119.4$ Billion in FY2027 (**Figure 20**).

Global Economic Outlook

The Global Economic Outlook analysis must be prudent due to the high uncertainty environment. According to the IMF World Economic Outlook of April 2020, the Global GDP growth in 2020 will be -3.0% followed by a recovery of +5.8% in 2021. For 2022-2025 period, there are no significant changes to the Global GDP growth forecast, as it expected to grow at ~3% annually. These numbers are subject to a continuous monitorization and could have a significant variation if a new functional vaccine is developed in the meantime (**Figure 21**). Additionally, the **Oil Price** fluctuation has an impact on Airliners, which are the main source of orders of commercial aircraft. According to the IMF World Economic Outlook of April 2020, the Brent Crude Oil is predicted to be on average $34.80 per barrel ($/bbl) in 2020 and $36.40 in 2021. Based on the monthly Futures' contracts for the 2022-2025 period, the Brent Oil Price is expected to increase at 7.8% CAGR, from $42.4/bbl to $53.04/bbl, respectively (**Figure 22**). Additionally, there are other variables that could have an impact on the assumptions for the Global GDP growth and the Brent Oil Price per barrel, which will be explained further ahead on the Investment Risks' section.

Competitive Environment of A&D Industry

A&D industry is a **mature industry**. There is a smaller YoY growth, there are two dominant players that control the Aerospace market with 90% market share and an intense competition in the Defense market, that is dominated by American companies alongside with AIR. **Aerospace** can be described as **highly sensitive to its main customers' financial condition**, the airliners. The Airliners' financial condition is mainly affected by the demand for travel (**Figure 24**). The **Defense market** has its **own business cycle**, depending on the geopolitical

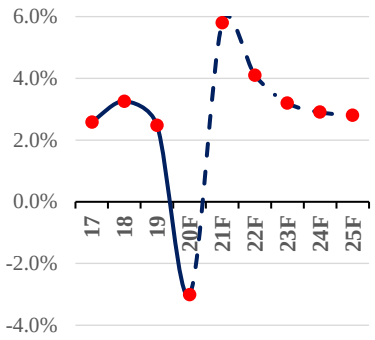


Figure 21 - World GDP growth
Sources: IMF (IMF, 2020); OECD database

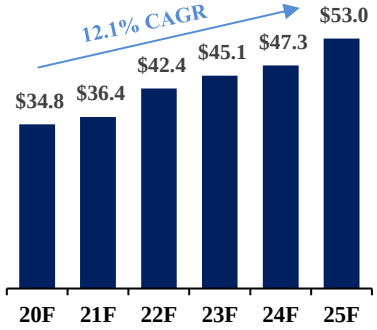


Figure 22 - Brent Oil Prices ($/bbl)
Sources: (CME Group, 2020); (CME Group, 2020)

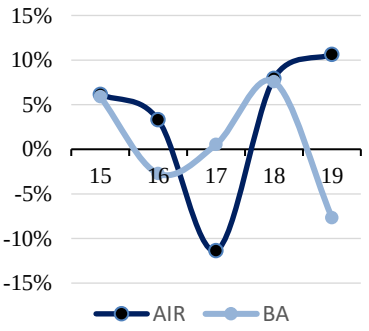


Figure 23 - AIR vs BA YoY Revenues growth rate
Source: Thomson Reuters

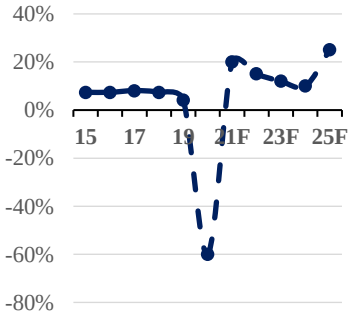


Figure 24 - Demand for air travel (YoY growth rate)
Source: (ICAO, 2020)

situation of each nation. The M&A activity has been stable over the past years considering the number of transactions, nonetheless the implicit values do not have a clear trend (**Figure 25**). This activity can be explained by the pretension of companies to gain new capabilities, access emerging technologies, and expand to new markets.

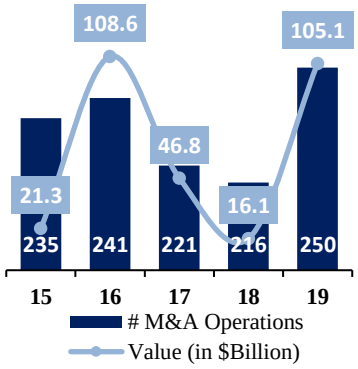


Figure 25 - M&A activity
Source: (IMAA, 2020)

PESTEL Analysis

Political / Economic

Political tensions have a major influence on the overall state of world's economy. Most of the companies operating in the A&D industry have a **global presence**, so they are exposed to geopolitics events, trade wars and other types of diplomatic tensions. Another trend in the industry, that will impact the years to come is the **demand for air travel** in developing economies is now increasing, as well as the demand for military equipment, so countries like China and India will play a huge role in the future of the A&D industry, as 2 out of 7 people in the world are from these two nations (**Figure 26**). An important aspect to mention is the **2020 United States' Presidential Elections**. The possible outcome is either a reelection of Donald Trump or a new President. In any case, new economic policies will be decided depending on the winner and will have an impact on global economy.

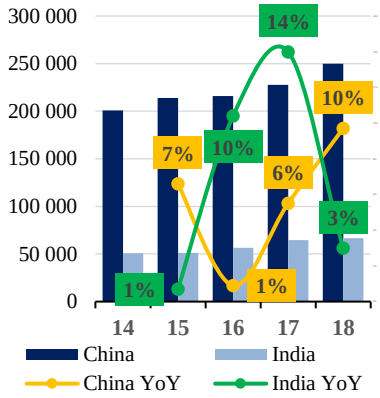


Figure 26 - China & India Military Expenditures, in Billion USD
Source: World Bank database

Social

As the global population is rising, mainly in developing countries where the growth rate is higher, the demand for air travel increases along with, representing a key factor for the industry' future.

In the US, A&D companies have a significant impact on the locations where they have facilities, employing several people with an average wage 87% above the national average[10]. There are also negative externalities, such as the inherent pollution from the production cycle. Companies are trying to establish more ESG-related initiatives and mechanisms to improve society's well-being.

There are other important social issues related to data security. As companies have access to all of employee's personal and high-classified information and must keep it protected from leaks.

Technological

Research and Development (R&D) plays a major role in the A&D industry, being extremely important in terms of product and software innovations. It is expected that investments in this segment will increase, leading to new innovative technologies, upgraded processes, improving safety and, bearing in mind environmental concerns such as more efficient operational processes, along with new fuel-efficiency engines/mechanisms (**Figure 27**).

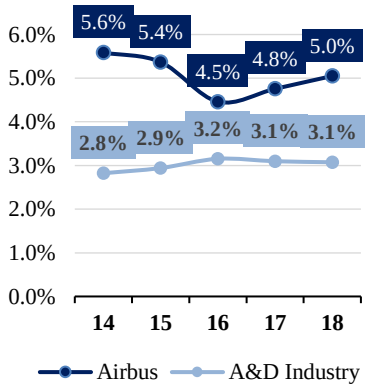


Figure 27 - R&D as % of Revenues, AIR vs Industry
Source: Thomson Reuters

[10] According to the AIA database. Source: (AIA, 2020)

Environmental

The concept of Sustainability is a trend nowadays, and A&D companies are concerned about its environmental impact. Most of companies have committed to the 2015's Paris Climate Agreement, implementing several targets to mitigate their operations' side-effects. One of these targets is to reach the carbon-neutral point, where companies would achieve an equilibrium between emitted and captured CO_2 emissions, which have registered a staggering increase over the past decades (**Figure 28**).

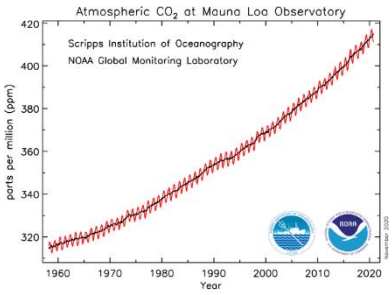


Figure 28 - Atmospheric CO2 at Mauna Loa Observatory, in ppm
Source: (Earth System Research Laboratories, 2020)

Legal

The A&D industry is one of the most regulated industries, as companies need to comply with several rules about topics as quality, safety, respect for human rights, environment, and other compliance issues. Intellectual Property can, along with other factors, be a key to succeed in the market, protecting their new innovative aircraft parts, software, new devices, manufacturing or assemble procedures that will ultimately make companies more competitive.

Industry Demand & Supply Drivers

Demand Drivers

Geopolitical and Economic Events

Geopolitical events have an impact on the A&D's demand, especially in the Defense segment, as the existence of diplomatic tensions/conflicts between nations will certainly rise their military spending. Despite being positive for Defense companies, it will negatively affect the Aerospace segment, as commercial aircraft manufacturers will have cancelled orders by their customers, the airliners, due to the declining demand for leisure travelling. Other events such as an economic slowdown, a terrorist attack, or a pandemic might produce the same effects, as national security will need to be guaranteed.

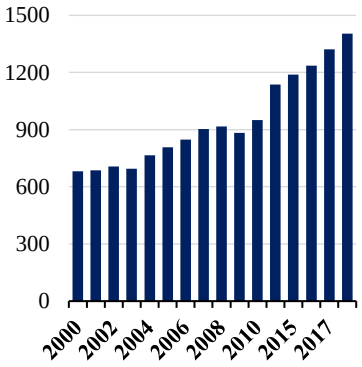


Figure 29 - Number of International Tourist Arrivals, in Million passengers
Source: (UNWTO, 2020)

Tourism growth

The number of international tourist arrivals soared from 682 million in 2000YE to 1,404 million in 2018YE (**Figure 29**). This was possible due to the expansion of existing hub airliners and the increasing market share of the Low-Cost Carriers (**Figure 30**), that are fueling the orders of the OEMs.

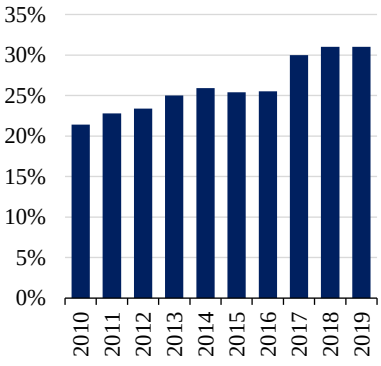


Figure 30 - LCC market share trend (%)
Source: (Statista, 2020)

Innovation

The way companies must gain some market over their competitors is through creating innovative products that meet their customer's needs. That can be by creating more fuel-efficient engines or upgraded systems for the commercial aviation segment, or by creating new and safer IT systems to combat the risks involved with cybersecurity, or creating new military equipment, for the defense segment. It is through this innovation that the players of this industry will gain more contracts with their customers.

Supply Drivers

M&A activity

A&D companies need to improve their production rates and efficiency, but they are having problems in scaling it up. The rise in M&A activity in the industry, mainly in the supply chain, is allowing some vertical integration to happen, and, therefore, creating bigger suppliers with bigger capacity to meet the industry desired production rates.

Top 5 M&A operations 2020HY			
Target	**Acquirer**	**Value (in $B)**	**Segment**
Sembcorp Marine Ltd	Shareholders	5.4	Arms & Vehicles
Collins Aerospace-Military Global Positioning	BAE Systems	1.9	Electronic Equip.
Consolidated Aerospace Manufacturing	Stanley Black & Decker Inc	1.5	Aircraft & Parts
Showa Aircraft Industry Co Ltd	BCPE Planet Cayman LP	0.8	Aircraft & Parts
Airbus Canada LP	Investor Group	0.6	Aircraft & Parts

Table 6 - Top 5 M&A operations in A&D, 2020HY
Source: (PWC United States, 2020)

Dependence on Key Suppliers and Subcontractors

OEMs are dependent on several key suppliers and subcontractors to provide them with all the components that they need to manufacture its products. To accomplish their production targets, OEMs rely upon the good performance of their suppliers. Some OEMs manage well the production process so that they inherit some flexibility in production lead time to compensate for a possible production limitation of a supplier, but in some cases it might just be impossible. Engine Manufacturers as well as technological systems producers are among the key suppliers, as any disruption in their production cycle will inevitably affect OEMs' production cycle.

Industrial Ramp-Up

To ramp-up production, OEMs need to guarantee advantageous trade deals with their network of suppliers and need to be sure that every company in the supply process has capacity to increase its production.

Porter's 5 Forces Framework

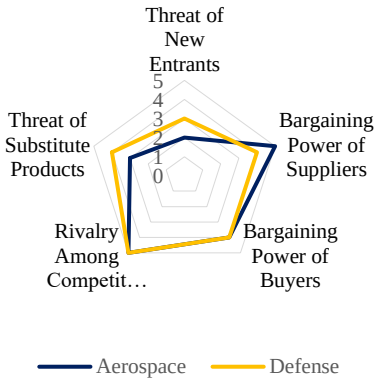


Figure 31 - Porter's Five Forces Framework

Threat of New Entrants: Medium-Low (**2**) Aerospace; Medium (**3**) Defense.
Regarding Aerospace industry we consider the threat of new entrants to be **Medium-Low**. High initial capital requirements, difficulty in managing the supply chain, establishing a track record, inflow of orders and getting the certifications needed are just some of the barriers that companies entering the market will have to face. However, there are companies, particularly Chinese and Russian, that are managing to enter the market, despite all those initial problems. Concerning Defense, we consider there is a **Medium** threat of new entrants as new companies can bring new technologies and innovative weaponry.

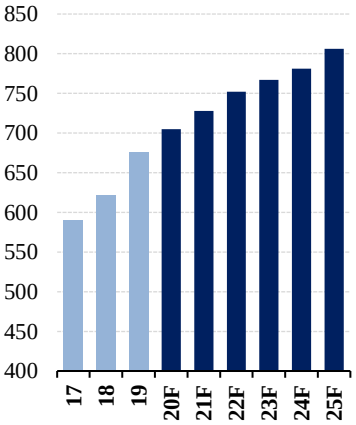


Figure 32 - US Military Expenditure, in $ Billion
Source: (Duffin, 2020)

Bargaining Power of Suppliers: High (**5**) Aero; Medium-High (**4**) Defense.
The supply chain and its management are one of the challenges that OEM's are facing nowadays, mainly because a ramp-up in production can only happen if the suppliers meet the needs of the companies. Several M&As over the past years also enhanced the vertical integration in the supply chain, therefore there are fewer and larger suppliers, giving those suppliers more bargaining power. The Defense industry has a larger number of companies operating, it is less complicated for Companies to change its suppliers.

Bargaining Power of Buyers: Medium-High (**4**) for both.

Within the defense segment, there is one major customer, the U.S. government (**Figure 32**), that is also one of the regulators of this industry. Furthermore, the fact that most of the revenues come from the government, and are, therefore, subject to the yearly budget, gives this buyer a big power over the manufacturers. Meanwhile, in the aerospace segment that is not the case. As there are 2 main companies, that share 90% of the market, the buyers end up not having a great deal of leverage over those 2 companies.

Threat of Substitute Products: Medium (**3**) for Aero; Medium-High (**4**) for Defense.

Due to the high barriers to entry the industry, namely the long and expensive production cycle, there are few substitute products. However, in Europe, due to environmental-friendly political pressure, the high-speed trains are becoming increasingly popular for intracontinental leisure and work trips and for cargo (**Figures 33** and **34**). An example of such investment is the rail-connection between Sines Port and European railway system. Regarding the Defense industry, as there is a larger number of companies operating, with each developing different products for the same duties, the threat of substitute products is a real issue.

Rivalry Among Competitors: High (5) for both.

Rivalry in this industry is **High**. In the Aerospace segment, the two main companies are always trying to be bigger than the other by delivering the most technological advanced, most efficient aircraft to their customers. In the Defense segment, rivalry is also **High**, but for different reasons. Defense companies depend on their ability to land contracts with Governments, and it is done through bidding wars, which increase the competition between the major players.

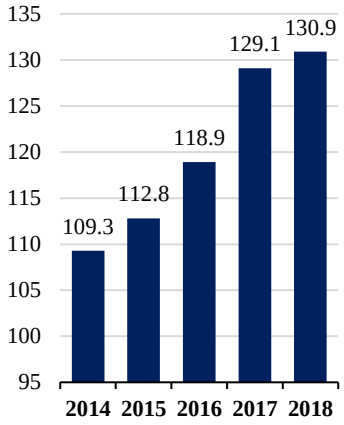


Figure 33 - High speed rail transport in EU, in Billion passenger kilometers
Source: (Mazareanu, High-speed rail transport in EU from 2000 to 2018, 2020)

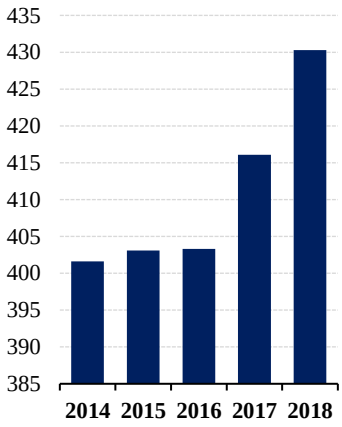


Figure 34 - Rail freight transport in EU28
Source: (Eurostat, 2020)

Competitive Positioning

SWOT Analysis

Strengths

Airbus has a large network of suppliers which are monitored to avoid any production disruption. AIR has also invested in facilities spread across the Planet with assembly lines in Europe (**Figure 35**), China and, more recently, in the USA. Due to the large investment over the last years, Airbus offers a competitive and cutting-edge portfolio in the Commercial Aircraft, D&S and Helicopters segments. The concept of sustainability is on the center of the Company's strategy, which intends to achieve a carbon-neutral point in its operational cycle. In FY19, Airbus became the leader player in the commercial aircraft segment regarding market share of deliveries, as mentioned above.

Figure 35 - AIR assembly lines in Europe

Weaknesses

Over the last years, Airbus verified some operational inefficiencies which led to several delays in launching new models. Despite being the leader in the Helicopters segment, the demand is sluggish as the number of order backlog does not verify a significant change.

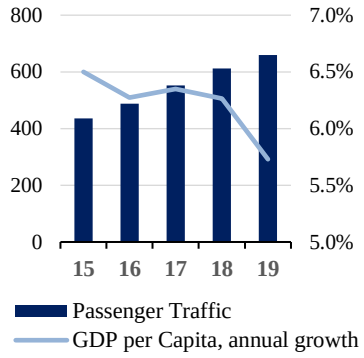


Figure 36 - China Air Passenger Traffic, in Million passengers
Source: (CEIC, 2020): (World Vank, 2020)

Opportunities

The increasing demand for aircraft due to the tourism growth, especially in China (**Figure 36**) and India represent an opportunity, as LCC are surging in those regions, which are the two most populous countries in the world. The increasing military expenditure by NATO countries, China and India represent an opportunity for Airbus' Defense segment. Over the last few years, recent scandals with a direct competitor's commercial aircraft model affected its order backlog, meanwhile Airbus reputation remained immaculate.

The development of Unmanned Aerial Systems (UAS) represents an opportunity for Airbus Space segment, as it is a recent technology with high potential (**Figure 37**).

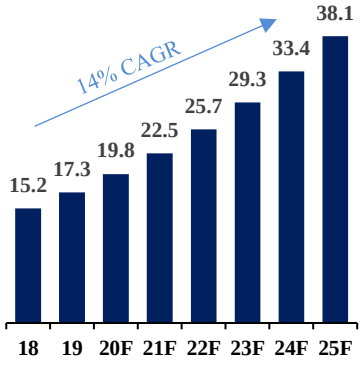


Figure 37 - UAV market value, Billion USD
Source: (MCG, 2019)

Threats

As it is a Company that deals with privileged customers, such as governments and airlines, Airbus is often a target for Cybersecurity attacks which intend to extract private data.

Additionally, the overdependence on suppliers presents an operational threat to Airbus, as any disruption might affect the output production rate, that is why Airbus has a wide range of suppliers. Geopolitical tensions and commodity prices may have an indirect impact on the order backlog. Due to the global presence and diversified wallet of customers, Airbus is exposed to currency risks. A&D industry is one of the most regulated ones, so Airbus is exposed to a strict regulatory pressure. The COVID-19 pandemic presents the most critical threat to Airbus, as its production has been disrupted due to delayed and/or cancelled orders.

Peers

As AIR operates in more than one segment, the peer group is composed by multinational Aerospace & Defense companies, from the production of commercial aircraft to defense equipment or IT systems.

The focused companies in Commercial aircraft segment are Boeing, COMAC, Embraer, Mitsubishi and UAC while the other peers from other segments include Safran, BAE Systems, Thales, MTU Aero Engines, General Dynamics (GD), Northrop Grumman, Lockheed Martin (LM) and Raytheon Tech (**Table 7**).

In the **Commercial Aircraft** segment, besides Airbus and Boeing, there are other players such as **Embraer**, Commercial Aircraft Corporation of China (**COMAC**), Mitsubishi Aircraft Corporation (**MAC**) and United Aircraft Corporation (**UAC**). Embraer is a Brazilian corporation and produces Narrow-Body jets with short-to-medium ranges. COMAC launched two aircraft models

A&D Company	Fin. Statements?	Peer?
Boeing	YES	YES
Embraer	NOT ALL	NO
COMAC	NO	NO
MAC	NO	NO
UAC	NO	NO
Safran	YES	YES
Thales	YES	YES
MTU Engines	YES	YES
GD	YES	YES
Northrop	YES	YES
LM	YES	YES
Raytheon	YES	YES

Table 7 – Peers Selection

targeted to compete with Airbus A320 and Boeing 737 and its plans include 2 wide body aircrafts to compete with Airbus A350 and Boeing 787. MAC is a Japanese company and is set to launch the Space Jet M90, a small twin-engine aircraft with capacity for 70 to 90 passengers, after March 2021, due to operational delays. Finally, UAC is a Russian state-owned company that resulted from the merger process of Ilyushin, Irkut, Tupolev and other Russian aircraft manufacturers and offers a portfolio composed by civilian, military and cargo aircrafts. MAC is controlled by Mitsubishi Heavy Industries. Embraer is publicly traded in Brazil (BOVESPA index) and in New York Stock Exchange (NYSE). UAC major shareholder is the Russian State, with 80% participation, being the remaining 20% traded in the Moscow Stock Exchange. COMAC is a state-owned corporation. From these firms, none has its updated financial statements available.

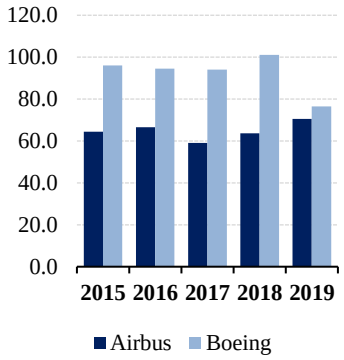


Figure 38 - AIR vs Boeing Revenues, in Billion USD

5. Investment Summary

With a price target of **€74.81/sh** and an upside potential of 17.8% on 30th June 2021, using the Discounted Cash Flow Method, the recommendation stands for **BUY**, with medium risk. The current Company's undervaluation is due to the uncertainty around the COVID impact on the Aviation industry, which has been facing a sharp decline in demand for air travel. Consequently, as Commercial Aircraft segment is the most representative of AIR revenues (ranging from 63.4%-73.4% during the forecast period), investors might be reluctant on AIR's future due to the excessive exposure to Airliners' financial condition.

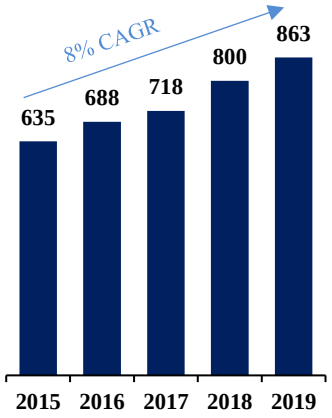


Figure 39 - CA deliveries until 2019YE, in units

Key Drivers

AIR is the market leader in Commercial Aircraft and Helicopter segments. Between 2015YE to 2019YE, AIR CA annual deliveries increased at a 7.97%CAGR, from 635 to 863 units (**Figure 39**).

Airliners financial condition is one of the most important demand key drivers affecting Airbus. As Airliners are the main customer of Airbus CA segment, any change in the financial condition will have an impact on future projects considering revenues, operational costs and more importantly for Airbus, their fleet. The financial condition of Airliners is measured by some direct key criteria such as Revenue per Seat Kilometer (RPK) or Cost per Available Seat Kilometer (CASK) which are affected by the demand for air travel, oil prices, tourism trends among other examples. According to the Euromonitor International paper "Travel 2040", the demand for air travel in 2020YE will be 60% lower than in the previous period and it will take some years for demand to reach 2019YE's numbers (**Figure 40**).

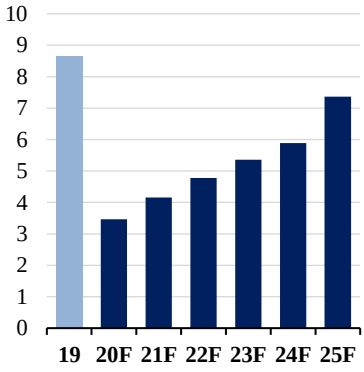


Figure 40 - Forecasted RPK, in trillion
Source: (IATA, 2020)

The **Global Defense Expenditure** is the main driver of the Company's D&S segment revenues, as well as an important driver for the Helicopters' revenues. During the forecast period, global defense expenditure is projected to increase at a 2.7% CAGR (**Figure 4**).

The **GDP growth** has an impact on AIR revenues. The overall status of the global economy affects people, companies, and national Governments. In an expanding (contracting) economy, people's disposable income tends to increase (decrease) and the propensity to afford a tourism travel is higher (lower). Likewise, companies and national Governments follow the same strategy, to reduce (increase) costs during an economic recession (expansion). GDP growth affects mainly the CA and the Helicopters' segments due to their exposure to the global economy dynamic. During the forecast period, the Global GDP growth is expected to increase at 2.6% CAGR (**Figure 41**).

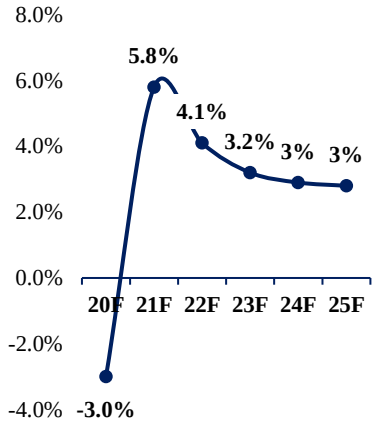


Figure 41 - Global GDP growth, in %
Source: (IMF, 2020), (Nikkei Asia, 2015), (Bloomberg Intelligence, 2019)

Valuation methods

For the Airbus SE valuation, the Enterprise Value (**EV**) was computed using the Free Cash Flow to Firm (**FCFF**) model, reaching a price target of 74.81€/sh.

To complement the Company's analysis, other models were used. Using the **FCFE**, the price target is 48.57€/sh, a **3-stage DDM** would lead to a price target of 20.75€ and using the **APV** method the price target reached 78.04€. Concerning the Relative valuation, using a selected range of peer companies from the A&D industry, most of EV and Price Multiples are biased as the last available data is related to 2019YE, when the COVID did not have material impact on Company's financials. Nevertheless, the **EV/Sales** reached a price target of 82.45€/sh and the **P/S** reached a price target of 78.58€/sh. Other ratios as **EV/EBITDA, EV/FCFF, P/E and P/B** reached negative or close to zero price targets, not complementing the FCFF price target.

Price Target	
EV	**61,505**
Net Debt (-)	(2,986)
Equity Value	**58,519**
#Shares Outstanding	782
Price Target	**74.81 €**
Price 30 Jun, 20	63.52 €
Upside Potential	**17.8%**

Table 8 – FCFF Approach

Price Target	
Equity Value	**37,995**
#Shares Outstanding	782
Price Target	**48.57 €**
Price 30 Jun, 20	63.52 €
Upside Potential	**-23.5%**

Table 9 - FCFE Approach

6. Valuation

To perform a valuation on AIR, it was only possible to forecast AIR consolidated financials as the Company does not disclose its segments' financial statements. The valuation considered a forecast period of 6 years, from 2020YE to 2025YE. The price target will be estimated to 30th June 2021. Two different approaches were considered: an **absolute valuation** based on Company's financials and a **relative valuation** using a selected range of Peer companies from the A&D Industry.

For the absolute valuation, 3 methods were considered to compute AIR price target: The **Discounted Cash Flow** (**DCF**), the **Adjusted Present Value** (**APV method**) and the **Dividend Discount Model** (**DDM**).

Price Target	
EV	**60,315**
PV Interest Tax Shield	729
Equity Value	**61,044**
#Shares Outstanding	782
Price Target	**78.04 €**
Price 30 Jun, 20	63.52 €
Upside Potential	**22.9%**

Table 10 - APV Method

The DCF method is the most appropriate for AIR as it considers a large amount of useful information for the future projections and a changing capital structure in the forecast period which is reflected in the discount rate. To calculate the Enterprise Value of AIR according to the DCF method, the **Free Cash Flows to Firm** (**FCFF**) and the **Free Cash Flows to Equity (FCFE)** were used. The **DDM** is not a suitable method for the Company valuation given the uncertainty around the COVID pandemic which has an impact on AIR's future payout policy. The Adjusted Present Value (**APV**) method is a suitable valuation model for AIR as it considers the Unlevered Firm Value plus the Net effect of Debt, computed as the Interest tax shield.

For the Relative Valuation, two different multiples approaches were used: **Price Multiples** and **Enterprise Value Multiples**. To perform these methods, a group of Peer companies from the A&D industry was selected. Unfortunately, from the peers mentioned previously in the Industry Overview and Competitive Positioning section, Boeing is the only company whose financial statements and fundamentals are updated on Thomson Reuters and Bloomberg platforms. Concerning the Price multiples, three were used: **Price-to-Earnings** (**P/E**), **Price-to-Sales (P/S)** and **Price-to-Book (P/B)**. Regarding the EV multiples, other three were used: **EV/EBITDA**, **EV/Sales** and **EV/FCFF**. From the total of 6 multiples, only 2 are have reached reliable price targets, the **EV/Sales** (€82.45/sh) and the **P/S** (€78.58/sh). The **EV/FCFF** multiples is not suitable for this model as the 2021YE FCFF is expected to be -1,720M while the Peers' average historical multiple is 37.82x. The **P/E** multiple is also not suitable, as the 2021YE projected EPS is 0.07€ and the Peers' average multiple is 14.14x. Lastly, the **P/B** multiple is meaningless, as the AIR Equity Book value is expected to be negative in 2021YE while the Peers' average is positive, resulting in a negative price target. More details about the valuation methods can be seen in **appendix 13 and 14**.

Price Target	
2021F EBITDA	2,500
Peers' EV/EBITDA	**14.31x**
AIR EV	35,770
AIR Net debt	(2,986)
Equity Value	**32,784**
#Shares Outstanding	782
Price Target	**41.91 €**
Price 30 Jun, 20	63.52 €
Upside Potential	**-34.02%**

Table 11 - EV/EBITDA multiple

Price Target	
2021F Sales	45,391
Peers' EV/Sales	**1.49x**
AIR EV	67,480
AIR Net debt	(2,986)
Equity Value	64,494
#Shares Outstanding	782
Price Target	**82.45 €**
Price 30 Jun, 20	63.52 €
Upside Potential	**29.8%**

Table 12 - EV/Sales

Price Target	
AIR Sales per Share	58.03 €
Peers' P/Sales	**1.35x**
Price Target	**78.58 €**
Price 30 Jun, 20	63.52 €
Upside Potential	**23.7%**

Table 13 - P/S multiple

Forecast Analysis

Revenues

Airbus total revenue is the sum of its segments external revenues and is expected to register a 10.9% CAGR between 2020YE and 2025YE, from €39,030M to €65,535M, respectively. The CA segment is forecasted to have a 61.7% share of total revenues in 2020YE, a weight which will increase to 73.4% in 2025YE. The Defense & Space segment is forecasted to have a 24% share of total revenues in 2020YE which will gradually decline to 16.6% in 2025YE. The Helicopters segment will represent 14.3% of total revenues of AIR in 2020YE, a share that will decrease to 10% in 2025YE (**Figure 42**).

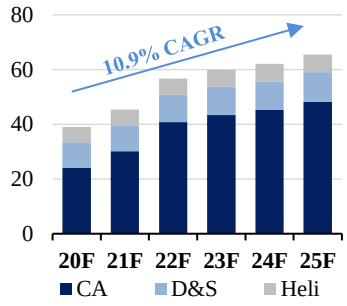


Figure 42 - AIR Revenues, in Billion EUR

The CA segment revenues are calculated as the number of aircraft produced (and assumed to be delivered) multiplied by the respective commercial price and are expected to increase at a 14.9% CAGR during the same period (**Figure 43**). Due to the COVID pandemic, AIR was forced to lower its production rate as the

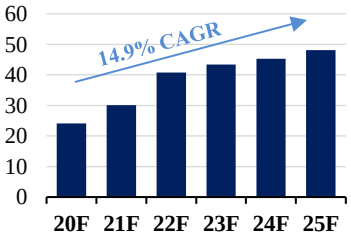


Figure 43 - CA segment revenues, in Billion EUR

demand for new aircraft collapsed. Therefore, the Book-to-Bill ratio will be lower than 1, meaning that there will be more units delivered than in new net orders every year until 2024YE. However, the ratio will be higher than 1 in 2025YE, as the Global economy, the airliners' financial condition and, indirectly, the demand for air travel are expected to bounce, resulting in new aircraft orders (**Figure 44**).

The Defense & Space segment revenue is the sum of Military Aircraft, Space Systems and Connected Intelligence & Other revenues. D&S revenues are expected to increase 3.1% CAGR during the forecast period, from €9,362M to €10,887M (**Figure 45**), while the Net order intake is expected to increase at 2.7% CAGR, from $8,733M to $9,997M.

The Helicopters segment revenue is expected to register a 3.2% CAGR during the forecast period, from €5,595M to €6,532M (**Figure 46**). This segment Book-to-Bill is expected to register a 27.5% CAGR, as the net new orders are expected to bounce at a 29.1% CAGR while deliveries are expected a moderate variation for the upcoming years (**Figure 47**).

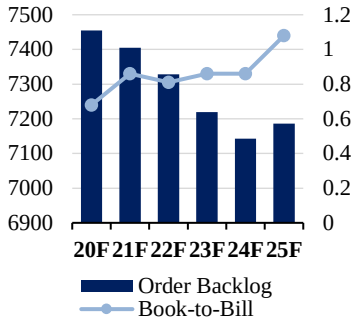


Figure 44 - CA Order Backlog, in units, and Book-to-Bill

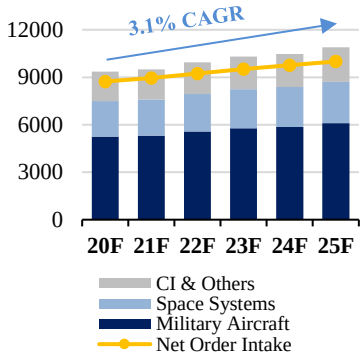


Figure 45 - D&S Revenues, in Million EUR

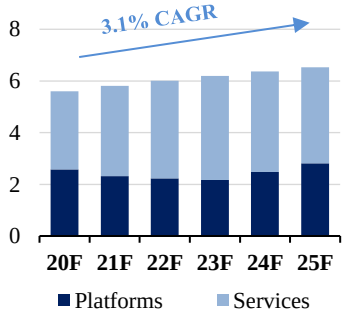


Figure 46 - Heli Revenues, in Billion EUR

CAPEX

Over the last years, Airbus has been investing in new production plants in the USA and in China to meet the local demand and reduce operational costs. Additionally, the recent acquisition of Bombardier's Commercial Aircraft program by $591M and the conversion of the A380 production facilities to the A320 family are another examples of Airbus recent Capex investments. However, due to the COVID impact on AIR operations and prospects, over the following 2-3 years the Company does not project any major Capital Expenditure to focus on cash preservation. Therefore, in 2020YE the Capex is expected to be equivalent to 4.9% of total revenues, a weight that will decrease to 3.7% between 2021YE to 2023YE. On 2024YE and 2025YE, the Capex is expected to increase 200bps annually (**Figure 48**), as the Company plans to invest in the new civil-aircraft generation, the "zero-emissions" hydrogen-fueled, which are projected to be launched by 2035[11].

R&D expenses

Due to the intense rivalry with Boeing, innovation is at the heart of AIR strategy to attract new customers and to have healthy relationship with the current ones. Between 2020YE and 2025YE, R&D expenses will increase at a 10.2% CAGR. Nonetheless, from 2020YE to 2023YE, the R&D expenses are expected to follow the historical average from 2017YE to 2019YE, 4.9% of the revenues. On 2024YE and 2025YE, the R&D expenses are forecasted to reach pre-COVID values, meaning a decrease of 100bps annually as share of total revenues (**Figure 49**).

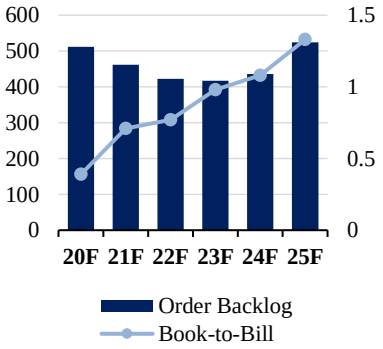


Figure 47 - Heli Order Backlog, in Units, and Book-to-Bill

[11] Source: (Field, 2020)

NWC

The NWC is expected to be positive during the forecast period, as the sum of inventories and trade receivables is greater than trade payables. The NWC is in an upward trend until 2020YE, when it hits its maximum value during the forecast period, €37.7 Billion. From 2023YE onwards, the NWC is expected to develop a negative trend, decreasing to €33.5 Billion by 2025YE (**Figure 50**). As a consequence of the progressive rebound in AIR operations, the Cash Conversion Cycle (**CCC**) verifies a 113 days' reduction during the forecast period, from 335 days in 2020YE to 222 days in 2025YE. The **DIO** has the largest impact on CCC and during the forecast period is expected to decrease from 400 days in 2020YE to 280 days in 2025YE, due to the decrease in the number of storage aircrafts. The DSO and DPO will also verify a decrease as the Company will be able to restore some of the Pre-COVID agility. DSO are expected to decrease from 50 days in 2020YE to 40 days in 2025YE, yet still far away from the Pre-COVID's 33 days. Likewise, the DPO will decrease from 115 to 100 days during the same period, which is about the same PRE-COVID's numbers.

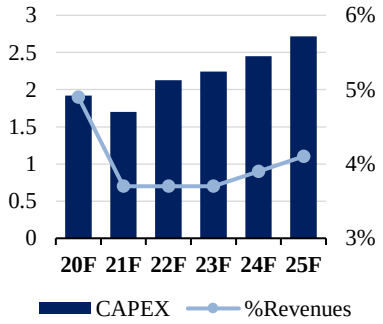


Figure 48 - Forecasted CAPEX, in Billion EUR

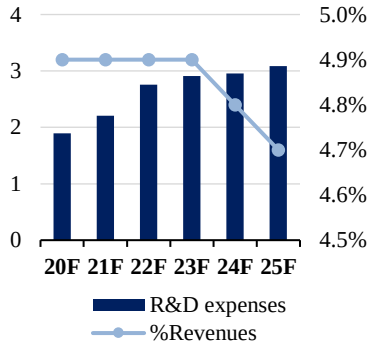


Figure 49 - R&D Expenses, in Billion EUR

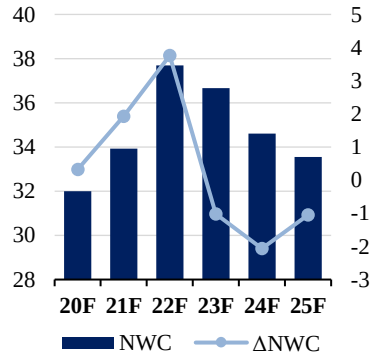


Figure 50 - Forecasted NWC, in Billion EUR

Cost of Capital

Cost of Equity (**Ke**) is calculated using an adjusted CAPM model considering the Country Risk Premium (**CRP**). For the whole forecast period, the Ke will be kept constant at 9.74%. The German 10Y Bond is the benchmark for the Risk-Free rate (**Rf**) and will also remain constant during the forecast period and for the Terminal Value (**TV**) at 0.11%. The Adjusted Beta of 1.25 results from the Blume Adjusted Beta formula and is calculated through a regression of AIR daily closing price with CAC40 during the period of 30th June 2015 until 30th June 2020. Due to its global exposure, a selected range of countries based on AIR geographical segments was chosen to extract the Market Risk Premium (**MRP**) and the Country Risk Premium (**CRP**) from the Damodaran's database. The MRP and CRP are respectively 6.82% and 1.10% across the forecast period and TV.

Cost of Debt (**Kd**) is calculated as the weighted average AIR bonds' coupon yield and is ranging from 2.03% to 2.12% in the forecast period. Due to the COVID impact on Company's financials AIR has already issued 2 structured bonds worth €6B and was granted access to a €20B credit line with unknown interest rate during the current fiscal year. Consequently, the Company does not have a capital structure target as the priority lies on being resilient and to save costs. Nevertheless, the Debt Ratio in 2025YE is expected to reach pre-COVID values of about 10%. The D/V is expected to range from 18.6% to 27% during the forecast period.

Cost of Capital	2021F	Terminal
Cost of Equity		
RFR	0.1%	0.1%
Adjusted Beta	1.25	1.25
MRP	6.8%	6.8%
CRP	1.1%	1.1%
Ke	**9.7%**	**9.7%**
Cost of Debt		
Pre-tax Cost of Debt	2.1%	2.1%
Tax-Rate	24.4%	23.9%
After-tax Kd	**1.6%**	**1.6%**
MV E/V	78.2%	81.4%
D/V	21.8%	18.6%
WACC	**8.0%**	**8.2%**

Table 14 - WACC Assumption

Terminal Value (TV) Assumptions

AIR is a mature Company, as its revenues reach records from year to year and at a faster pace than its main rival, Boeing. However, the COVID is having a strong impact on current AIR financials and future strategic projections. Until a vaccine

is not fully developed, the uncertainty will continue. However, the leadership in all the segments will not be affected, as AIR offers a renewed and highly efficient product portfolio. The unlevered cash flows are expected to increase a 2.1% growth rate, which is a conservative value given the expected growth rate of 10.9% CAGR of revenues. This TV growth rate for the FCFF is the weighted average of the OECD's LT GDP growth Outlook for AIR geographical segments (**Appendix 12**)

Payout Policy

Due to the uncertainty climate, AIR is not able to project when the dividends will be paid again to its shareholders and what the payout ratio will be. Over the past years, AIR reported strong results and a strong financial condition (e.g. in 2019YE, the Company had a Net Cash of more than €12B). However, the pandemic disrupted all the projections the Company had made for the upcoming years. According to the valuation model, AIR business is expected to have a V-shaped rebound and to start distributing dividends from 2022YE onwards, starting with a 40% Payout ratio (€0.78 DPS) and increasing at the historical average rate growth of 20% annually (**Figure 51**).

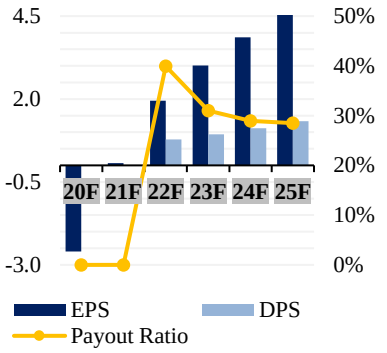


Figure 51 - Payout Policy, in EUR

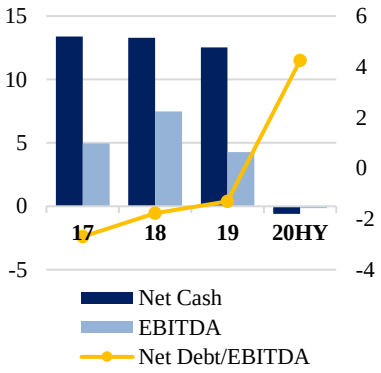


Figure 52 - Pre-COVID financial strenght, in Billion EUR

7. Financial Analysis

AIR is a mature company that is passing through a period of uncertainty towards the future. Until 2019YE, AIR was a cash making machine as it was beating deliveries record year after year, achieved the market leadership in the Commercial Aircraft and Helicopters segments, had a strong financial strength with net cash over €11B (**Figure 52**).

Profitability

During the forecast period, AIR Gross Profit (GP) is expected to increase at a 19.8% CAGR, reflecting a +590bps increase in GP margin (GPM) to 18.4% in 2025YE. Furthermore, the Company's EBITDA will increase at 49.4% CAGR, outpacing the revenues projected growth rate. However, as the EBITDA in 2020YE is expected to be 76.5% lower compared to the homologous figure, meaning the EBITDA margin CAGR growth is highly inflated. The Net Income Margin (NIM) will reflect the prior margins progress and it is expected to reach 5.6% in 2025YE (**Figure 53**). When assessing the returns' ratios, the ROA will increase 5pp, from -1.8% in 2020YE to 3.2% in 2025YE, while ROE, computed using the DuPont formula, will range from -4.1% in 2020YE to 7.4% in 2025YE (**Figure 55**). Both ROCE and ROIC are expected to register a similar upward trend (**Figure 54**). During the forecast period, AIR is not expected to create value in its investments, as the forecasted ROIC will not surpass WACC (**Figure 56**).

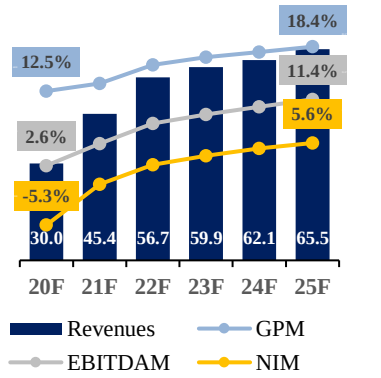


Figure 53 - Revenues, in Billion EUR, and Profitability Margins (%)

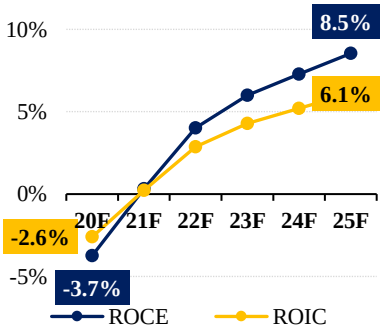


Figure 54 - ROCE vs ROIC

Efficiency

AIR Total Assets Turnover (TATR) is expected to increase 21.4pp during the 2020YE-2025YE period, to 0.56, since Revenues CAGR of 10.9% will be greater than the Total Assets CAGR of 0.8%. The Fixed Assets Turnover (FATR) will increase 92.8pp during the same period, as the average Fixed Assets are expected to decrease 1.2% CAGR (**Figure 57**). The increase in Asset Turnover means that AIR is expected to improve its operational efficiency to generate a higher level of Revenues from its Assets. The Cash Conversion Cycle (CCC) has registered an increase of 172 days between 2019YE and 2020HY, has the number of storage aircraft boosted Inventories figure by 18.9%. CCC will range from 335 days in 2020YE to 220 days in 2025YE (**Figure 58**), reflecting an accelerating operating cycle boosted by a decreasing trend in DSI, as the storage units will be delivered and the new net orders are expected to increase from 2022YE onwards.

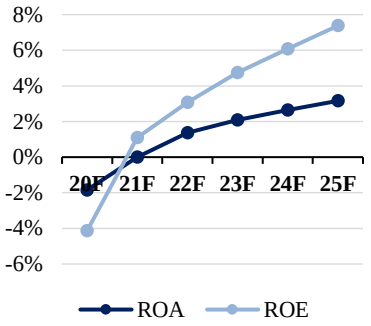


Figure 56 - ROA vs ROE

Solvency & Liquidity

During the forecast period, the Company's liquidity will have two different stages: from 2020YE to 2022YE, the Company will have negative cash flows as the negative Investing and the Financing cash flows are greater than the positive OCF. From 2023 onwards, the Company will generate cash. The Company's Cash Ratio will range from a minimum of 0.04x in 2022YE to a maximum of 0.19 in 2025YE. The Quick and the Current Ratio will follow the same trend (**Figure 59**). Furthermore, the Current Ratio is expected to be greater than 1 during the forecast period meaning AIR can cover its current liabilities with current assets. Concerning AIR solvency, the Debt Ratio is expected to decrease 6.6pp between 2020YE and 2025YE, as AIR will proceed to the repayment of its bonds outstanding at the respective maturity date while the Total Assets will increase at 0.5%CAGR (**Figure 60**). Additionally, the Debt-to-EBITDA is also expected to behave in the same way, decreasing from 18.39x in 2020YE to 1.52x in 2025YE (**Figure 61**). Overall, AIR will struggle to generate cash until 2022YE a situation which will affect its liquidity ratios. Beyond 2022YE, AIR situation will only get better as the Company's expected operations rebound will boost a cash generating cycle.

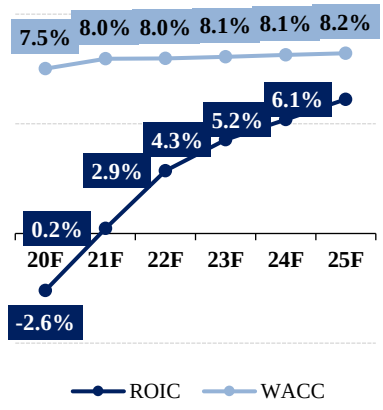


Figure 55 - ROIC vs WACC

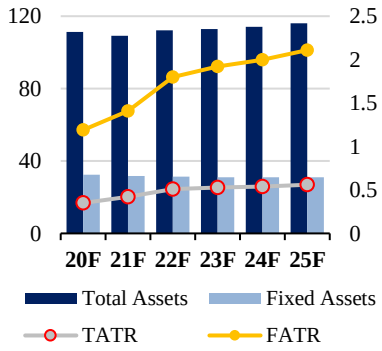


Figure 57 - TATR and FATR

8. Investment Risks

Dependence on Public Spending (OP1)

More evident on the Defense segment, it represents one of the biggest risks companies in this industry face, as it makes them hugely reliant on each nation's defense budget, which by its own is a risk as it might suffer constraints. Any delay on the budget approval, budget reduction or release of payments is an uncertainty that companies face and might have an impact in companies' financial results**.** Companies should have a geographically dispersed order backlog to mitigate this risk.

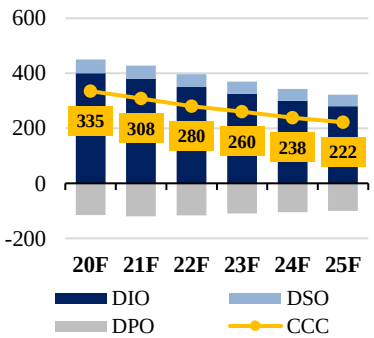


Figure 58 - Cash Conversion Cycle, in Days

Research and Development Programs (OP2)

A&D companies' R&D costs require a significant up-front investment with a high level of complexity, and the payback period can take several years or never been achieved at all, as it is impossible to assure that these plans will ever succeed. Also, there is a risk of exceeding costs compared to the initial budget when developing a new aircraft program, based on empirical experience (**Figure 63**).

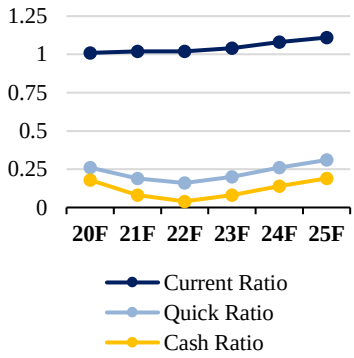


Figure 59 - Liquidity Ratios

Cybersecurity events (OP3)

Cyberterrorism is one of the biggest threats worldwide and, considering the clients, the flow of classified and proprietary information these companies possess, it makes the industry a big target for that kind of attacks. If companies do not have IT systems capable of protecting that information, it would be catastrophic not only for the clients, but also for citizens, and the reputation of the company (**Figure 64**).

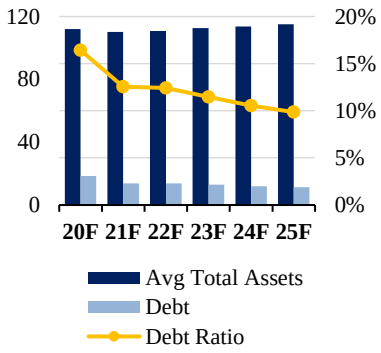


Figure 60 - Solvency Ratios

Tax Exposure (FM1)

As multinational Company, AIR has production and assembly plants spread in Europe, Asia, and America as well as orders from the most varied countries. This means the Company operates in multiple jurisdictions and consequently is subject to a wide number of different tax codes.

Geopolitical and Economic Environment (FM2)

As referred previously, A&D industry evolution depends on the geopolitical and economic environment. Any market disruption and/or economic downturn may have dangerous consequences such as crisis affecting the credit allowance and the markets' liquidity, economic recession, fluctuation in commodity price, currency exchange rates or interest rates, changes in debt credit ranking, and other adverse geopolitical situations, including Brexit or US protectionist policies. The events mentioned above would have a severe impact on companies' financial condition and results, as there would be some postponed or even cancelled orders. To mitigate this risk, having a geographical diverse order backlog and hedging strategies could lead to a more stable financial condition as well as setting some preventive clauses on contracts would avoid some financial struggle.

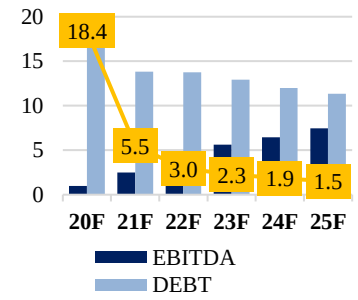


Figure 61 – EBITDA vs DEBT, in Billion EUR and Debt-to-EBITDA (x)

Foreign Currency and Interest Rate exposure (FM3)

Some A&D companies operate and have customers from all over the world, so they become exposed to foreign currency exchange rates as well as interest rate risks and changes in commodity prices. Having a hedging strategy for currency exchange rates could lead to a more stable financial condition and setting some clauses on contracts would prevent some damage. As an example, AIR has hedging strategies for commodities prices, currency exchange rate among other (**Figure 65**).

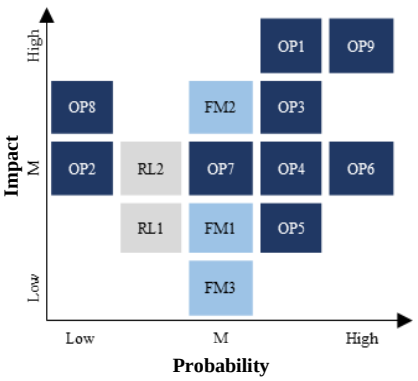


Figure 62 - Risk Matrix

Supply Chain (OP4)

Having an efficient supply chain is vital in this industry, as OEMs rely heavily on their suppliers and subcontractors. OEMs must have a wide network of certified suppliers, that are able to fulfill all the productions requirements. To strive, OEMs must carefully select its suppliers to accomplish its targets and meet the customers' pretensions. AIR's supply chain network counts more than 12,000 companies from the most diverse geographies.

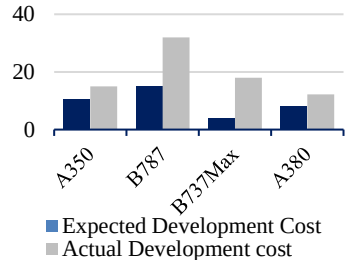


Figure 63 - Aircraft Expected vs Actual development costs, in Billion USD

Sources: (Leggett, 2013); (Gates, 2011) (Gelles, 2020); (Moxon, 2007)

Intellectual Property (RL1)

A&D companies often own a substantial number of patents related to the production processes and respective products or services provided (**Figure 66**). Generally, governments have licenses in these companies' intellectual property and/or in those that are developed due to a government contract or with government funding. Despite the intellectual properties' rights being an important factor in these companies' operation, the loss of those rights will not have a material impact in the business.

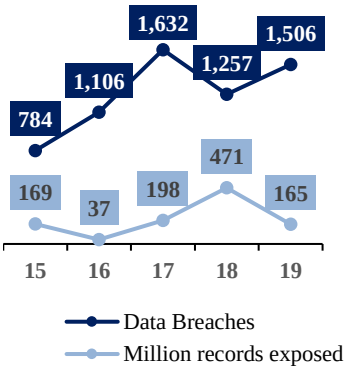


Figure 64 - Cyberattacks on US Companies

Source: (Clement, 2020)

Bid Protests (OP5)

Most of the business of A&D companies is provided through competitive bidding. This process requires considerable costs and managerial time to prepare bids that may not be awarded to the company or may be split among competitors, for the governments to maintain a broader industrial base. Other problem is the fact that many of the costumers of these companies are facing budget pressures, trying do more with less, identifying more affordable solutions than hiring a contractor**.**

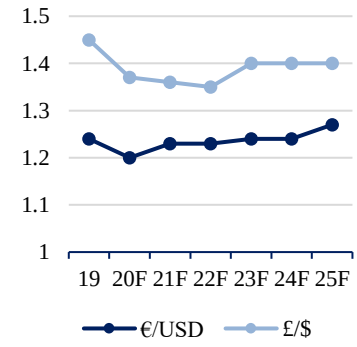


Figure 65 - AIR average expected Hedge rates

Source: Airbus 2019YE annual report

Ability to perform in key contracts (OP6)

Any delay due to technical/performance issue, or the failure to comply with the budget in place, can result in the termination of the contract, penalties (included in the contract), or even the loss of already existent orders. Additionally, any flaw during the process might affect the company's reputation, which plays a critical role in the capability of companies to deliver contracts with big clients. All of which are risks the industry faces and can have a major impact in companies' financial results.

Regulation Risk (RL2)

The market these companies operate in is an extremely regulated market, being those related to the contracts, especially with the U.S. government, or with the development and production of aircrafts, that needs to be according with FAA regulations. Any failure of compliance with such regulations can open the company up to eventual fines, termination of contracts and even investigations.

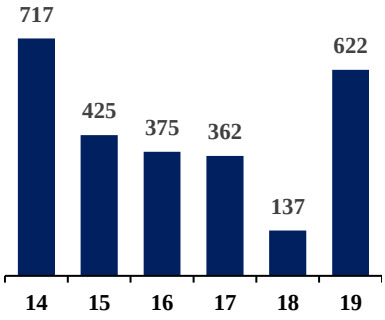


Figure 66 - Number of patents in the USA granted to AIR.

Source: (Mazareanu, Number of patents granted to Airbus in the USA 2011-2019, 2020)

Capacity to Innovate (OP7)

There are several areas of innovation for companies in the industry. They need to be able to innovate in the products they sell, as the demand is constantly

changing due to the technological advancements. To stay competitive, companies need to improve their manufacturing process with new technologies, which improves both their performance and their efficiency. Without this innovation companies have the risk of becoming obsolete in their processes and in their product portfolio**.**

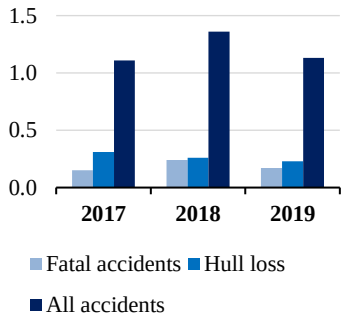


Figure 67 - Number of Accidents per 1 Million flights
Source: (IATA, 2020)

Accidents (OP8)

Any accident provoked by a production or software error will have a tremendous negative impact on OEMs. The latest public scandal is related to the Boeing 737 Max, with two land crashes: the first one on 29th October 2010 and the second one on 10th March 2019. The consequences are still affecting not only the company, but also stakeholders such as suppliers and its workers. Boeing's number of new net orders was negative in FY19 and the 737 Max production has been halted up until the aircraft passes the tests and, consequently, obtains the flight certificate. To mitigate this risk, FAA and other regulators are working on new regulation to avoid similar incidents (**Figure 67**).

Production Rate per month		
Until 2022YE	**Min**	**Max**
NB family	15	40
A330	0	2
A350	1	6
2022YE onwards		
NB family	20	60
A330	1	2
A350	1	6

Table 15 - CA segment production rate, in units per month
Source: Company media, (FT, 2020); (Flight Global, 2020)

COVID-19 (OP9)

The COVID-19 pandemic represents a risk for both Commercial Aerospace and Defense companies. Due to the several flight restrictions and the fear of infection, airliners are operating at a low rate and are parking and/or phasing out their older aircrafts earlier than expected to adapt to the new circumstances. Some of them will have state aid to support the fragile liquidity.

Concerning defense, the COVID pandemic had a minor impact on Defense companies so far. However, nowadays the top priority of the national governments is to battle the COVID pandemic and that requires a lot of resources. During this period, investments on defense are no longer the top priority, so companies must be prepared to face a slowdown in the order backlog by developing new and more sophisticated technologies.

		Price Target
		74.81 €
Production Rate	Optimistic	81.40 €
	Original	**74.81 €**
	Pessimistic	61.69 €

Table 16 - 2022YE onwards Production Rate sensitivity

Risks to Price Target

Production Rates: Due to the uncertainty around the Aviation industry, the 2022YE onwards' CA segment production rate (**Table 15**) is stressed in a sensitivity analysis (**Table 16**). Three scenarios were computed: a pessimistic, an optimistic and the base scenario. Under the pessimistic scenario, the monthly production rate would range from 11 to 51 aircraft, while under the optimistic it would range from 42 to 96 aircraft. The base scenario range goes from 22 to 68 aircraft. The Price Target (**PT**) would range from a -2.9% downside to a 28.1% upside potential.

		Price Target
	Δ%	**74.81 €**
Gross Profit Margin	1.5%	61.11 €
	0.5%	70.32 €
	Original	**74.81 €**
	-0.5%	79.29 €
	-1.5%	88.37 €

Table 17 - GPM sensitivity

Gross Profit Margin: As AIR does not disclose its COGS expenses' detail, any impact of raw or other materials used in the production operations is stressed in a GPM sensitivity analysis using five different scenarios which were computed to measure their impact on the Price target (**Table 17**). A(n) decrease (increase) on the GPM would have a negative (positive) impact on the PT.

		Price Target
		74.81 €
GDP Growth	Optimistic	82.33 €
	Original	**74.81 €**
	Pessimistic	69.31 €

Table 18 - Price Target Sensitivity to GDP growth

Global GDP growth: AIR is exposed to the global economy status. Three scenarios were computed: a pessimistic, an optimistic and the base scenario. Under the pessimistic scenario, which can be attributable to a severe COVID crisis, the Global GDP would only increase at 2.0% CAGR during the forecast period, while in the optimistic one, the World GDP would increase at 3.3% CAGR, given a faster economic rebound. Under these scenarios, the Price Target would range between a +9.1% to +29.6% upside potential (**Table 18**) .

Monte Carlo Simulation	
# Trials	15,001
Mean	**76.42 €**
S. Dev.	7.05 €
10th Percentile	67.76 €
90th Percentile	85.63 €
Upside Potential	**20.3%**

Table 19 - MC Simulation Statistics

Terminal Growth Rate (g) and WACC

A change in **g**, in **WACC** or **both** would affect the recommendation, as these variables are key in any DCF model. A(n) decrease(increase) in WACC combined with a(n) decrease(increase) in g would have a negative(positive) impact on the Enterprise Value (**EV**) and on the PT. (**Tables 20 and 21**).

Monte Carlo Simulation

A Monte Carlo simulation was performed as a complementary analysis to our valuation (**Figure 68**). With 15,001 simulations, the average price target obtained was **€76.42**/sh, a 20.3% upside potential compared to the close price of €63.52 on 30th June 2020, with 66.7% certainty. The WACC, the terminal growth rate and the monthly production rates in CA segment from 2022YE onwards were used to compute the simulation.

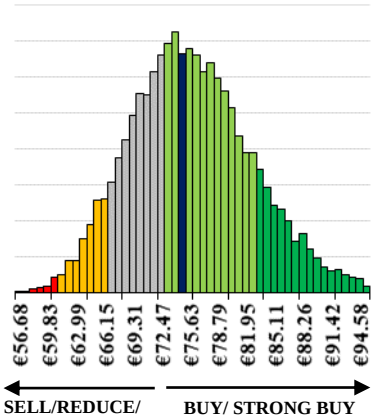


Figure 68 - Crystal Ball Monte Carlo Simulation

EV		WACC								
	61,505	7.42%	7.62%	7.82%	8.02%	8.22%	8.42%	8.62%	8.82%	9.02%
Terminal Growth Rate (g)	1.28%	62,901	60,705	58,649	56,718	54,903	53,194	51,581	50,058	48,617
	1.48%	64,880	62,548	60,367	58,324	56,407	54,604	52,906	51,304	49,791
	1.68%	66,998	64,514	62,197	60,031	58,002	56,098	54,307	52,620	51,029
	1.88%	69,268	66,618	64,151	61,850	59,698	57,683	55,791	54,012	52,337
	2.08%	71,709	68,874	66,241	63,791	**61,505**	59,368	57,366	55,487	53,720
	2.28%	74,339	71,298	68,482	65,868	63,434	61,163	59,041	57,052	55,186
	2.48%	77,183	73,912	70,891	68,094	65,497	63,080	60,824	58,716	56,740
	2.68%	80,267	76,737	73,488	70,488	67,709	65,129	62,728	60,488	58,394
	2.88%	83,623	79,801	76,295	73,067	70,087	67,327	64,765	62,380	60,154

Table 20 - Enterprise Value Sensitivity to WACC and g

Price per Share		WACC								
	74.81 €	7.42%	7.62%	7.82%	8.02%	8.22%	8.42%	8.62%	8.82%	9.02%
Terminal Growth Rate (g)	1.28%	76.60 €	73.79 €	71.16 €	68.69 €	66.37 €	64.19 €	62.13 €	60.18 €	58.34 €
	1.48%	79.13 €	76.15 €	73.36 €	70.75 €	68.29 €	65.99 €	63.82 €	61.77 €	59.84 €
	1.68%	81.83 €	78.66 €	75.70 €	72.93 €	70.33 €	67.90 €	65.61 €	63.45 €	61.42 €
	1.88%	84.74 €	81.35 €	78.19 €	75.25 €	72.50 €	69.93 €	67.51 €	65.23 €	63.09 €
	2.08%	87.86 €	84.23 €	80.87 €	77.73 €	**74.81 €**	72.08 €	69.52 €	67.12 €	64.86 €
	2.28%	91.22 €	87.33 €	83.73 €	80.39 €	77.28 €	74.38 €	71.66 €	69.12 €	66.73 €
	2.48%	94.86 €	90.67 €	86.81 €	83.24 €	79.92 €	76.82 €	73.94 €	71.25 €	68.72 €
	2.68%	98.80 €	94.29 €	90.13 €	86.30 €	82.74 €	79.45 €	76.38 €	73.51 €	70.83 €
	2.88%	103.09 €	98.20 €	93.72 €	89.59 €	85.78 €	82.26 €	78.98 €	75.93 €	73.09 €

Table 21 - Price Target Sensitivity to WACC and g

Appendix

Appendix 1 - Statement of Financial Position

In million €	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
Assets	**109,449**	**115,198**	**114,409**	**111,331**	**109,156**	**112,219**	**112,957**	**114,154**	**116,087**
Non-current Assets	**53,525**	**56,564**	**57,686**	**50,854**	**50,219**	**49,746**	**49,469**	**49,413**	**49,486**
Intangible assets	11,629	16,726	16,591	15,881	15,500	15,216	15,050	15,016	15,060
PP&E	16,610	16,773	17,294	16,534	16,280	16,091	15,980	15,958	15,987
Investment property	3	3	2	2	2	2	2	2	2
Investments accounted for under the equity method	1,617	1,693	1,626	1,489	1,489	1,489	1,489	1,489	1,489
Other investments and other long-term financial assets	4,204	3,811	4,453	3,550	3,550	3,550	3,550	3,550	3,550
Non-current contract assets	1	65	91	65	65	65	65	65	65
Non-current other financial assets	2,980	1,108	1,033	818	818	818	818	818	818
Non-current other assets	975	888	522	545	545	545	545	545	545
Deferred tax assets	4,562	4,835	5,008	5,997	5,997	5,997	5,997	5,997	5,997
Non-current securitites	10,944	10,662	11,066	5,973	5,973	5,973	5,973	5,973	5,973
Current assets	**55,722**	**58,300**	**56,723**	**60,477**	**58,936**	**62,473**	**63,487**	**64,741**	**66,601**
Inventories	29,737	31,891	31,550	37,416	40,865	45,678	44,258	41,978	41,011
Trade receivables	5,487	6,078	5,674	5,347	5,969	7,149	7,385	7,313	7,182
Current portion of other long-term financial assets	529	489	449	376	376	376	376	376	376
Current contract assets	496	789	1,167	1,184	1,184	1,184	1,184	1,184	1,184
Current other financial assets	1,979	1,811	2,060	1,865	1,865	1,865	1,865	1,865	1,865
Current other assets	2,937	4,246	2,423	2,311	2,311	2,311	2,311	2,311	2,311
Current tax assets	914	1,451	1,784	1,494	1,494	1,494	1,494	1,494	1,494
Current securities	1,627	2,132	2,302	1,587	1,587	1,587	1,587	1,587	1,587
Cash and cash equivalents	12,016	9,413	9,314	8,898	3,285	829	3,027	6,633	9,590
Assets and disposal group of assets classified as held for sale	202	334	-	-	-	-	-	-	-
Equity and liabilities	**109,449**	**115,198**	**114,409**	**111,331**	**109,156**	**112,219**	**112,957**	**114,154**	**116,087**
Equity attributable to equity owners of the parent	**10,742**	**9,719**	**5,990**	**(720)**	**(460)**	**454**	**2,169**	**4,593**	**7,216**
Capital stock	775	777	784	785	785	785	785	785	785
Share premium	2,826	2,941	3,555	3,594	3,594	3,594	3,594	3,594	3,594
Retained earnings	4,399	5,923	2,241	(2,347)	(2,291)	(1,377)	248	2,392	5,015
Accumulated other comprehensive income	2,742	134	(523)	(2,719)	(2,515)	(2,515)	(2,425)	(2,146)	(2,146)
Treasury shares	(2)	(51)	(82)	(42)	(42)	(42)	(42)	(42)	(42)
Total equity attributable to equity owners of the parent	**10,740**	**9,724**	**5,975**	**(729)**	**(469)**	**445**	**2,160**	**4,584**	**7,207**
Non-controlling interests	2	(5)	15	9	9	9	9	9	9
Total Liabilities	**98,707**	**105,479**	**108,419**	**112,052**	**109,616**	**111,765**	**110,787**	**109,561**	**108,872**
Non-current liabilities	**42,822**	**44,693**	**46,045**	**52,173**	**51,617**	**50,740**	**49,742**	**49,745**	**48,991**
Non-current provisions	9,779	11,571	12,542	13,527	13,527	13,527	13,527	13,527	13,527
Long-term financing liabilities	8,984	7,463	8,189	13,465	12,909	12,032	11,034	11,037	10,283
Non-current contract liabilities	16,013	15,832	16,980	16,549	16,549	16,549	16,549	16,549	16,549
Non-current other financial liabilities	6,704	8,009	7,498	7,793	7,793	7,793	7,793	7,793	7,793
Non-current other liabilites	298	460	384	373	373	373	373	373	373
Deffered tax liabilities	1,002	1,318	398	423	423	423	423	423	423
Non-current deffered income	42	40	54	43	43	43	43	43	43
Current liabilities	**55,779**	**60,354**	**62,374**	**59,879**	**57,999**	**61,024**	**61,045**	**59,816**	**59,880**
Current provisions	6,272	7,317	6,372	6,030	6,030	6,030	6,030	6,030	6,030
Short-term financing liabilities	2,212	1,463	1,959	4,950	922	1,713	1,893	952	1,061
Trade liabilities	13,406	16,237	14,808	10,757	12,905	15,139	14,979	14,692	14,647
Current contract liabilities	25,943	26,229	26,426	28,843	28,843	28,843	28,843	28,843	28,843
Current other financial liabilities	2,050	2,462	2,647	2,887	2,887	2,887	2,887	2,887	2,887
Current other liabilities	3,909	5,288	6,817	2,861	2,861	2,861	2,861	2,861	2,861
Current tax liabilities	1,481	732	2,780	3,025	3,025	3,025	3,025	3,025	3,025
Current deffered income	506	626	565	526	526	526	526	526	526
Disposal group of liabilities classified as held for sale	106	432	-	-	-	-	-	-	-

Common-Size BS (% Total Assets)	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
Assets	**100.0%**	**100.0%**	**100.0%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Non-current Assets	**48.9%**	**49.1%**	**50.4%**	**46%**	**46%**	**44%**	**44%**	**43%**	**43%**
Intangible assets	10.6%	14.5%	14.5%	14.3%	14.2%	13.6%	13.3%	13.2%	13.0%
PP&E	15.2%	14.6%	15.1%	14.9%	14.9%	14.3%	14.1%	14.0%	13.8%
Investment property	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Investments accounted for under the equity method	1.5%	1.5%	1.4%	1.3%	1.4%	1.3%	1.3%	1.3%	1.3%
Other investments and other long-term financial assets	3.8%	3.3%	3.9%	3.2%	3.3%	3.2%	3.1%	3.1%	3.1%
Non-current contract assets	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Non-current other financial assets	2.7%	1.0%	0.9%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%
Non-current other assets	0.9%	0.8%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Deferred tax assets	4.2%	4.2%	4.4%	5.4%	5.5%	5.3%	5.3%	5.3%	5.2%
Non-current securitites	10.0%	9.3%	9.7%	5.4%	5.5%	5.3%	5.3%	5.2%	5.1%
Current assets	**50.9%**	**50.6%**	**49.6%**	**54.3%**	**54.0%**	**55.7%**	**56.2%**	**56.7%**	**57.4%**
Inventories	27.2%	27.7%	27.6%	33.6%	37.4%	40.7%	39.2%	36.8%	35.3%
Trade receivables	5.0%	5.3%	5.0%	4.8%	5.5%	6.4%	6.5%	6.4%	6.2%
Current portion of other long-term financial assets	0.5%	0.4%	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Current contract assets	0.5%	0.7%	1.0%	1.1%	1.1%	1.1%	1.0%	1.0%	1.0%
Current other financial assets	1.8%	1.6%	1.8%	1.7%	1.7%	1.7%	1.7%	1.6%	1.6%
Current other assets	2.7%	3.7%	2.1%	2.1%	2.1%	2.1%	2.0%	2.0%	2.0%
Current tax assets	0.8%	1.3%	1.6%	1.3%	1.4%	1.3%	1.3%	1.3%	1.3%
Current securities	1.5%	1.9%	2.0%	1.4%	1.5%	1.4%	1.4%	1.4%	1.4%
Cash and cash equivalents	11.0%	8.2%	8.1%	8.0%	3.0%	0.7%	2.7%	5.8%	8.3%
Assets and disposal group of assets classified as held for sale	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Equity and liabilities	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Equity attributable to equity owners of the parent	**9.8%**	**8.4%**	**5.2%**	**-0.6%**	**-0.4%**	**0.4%**	**1.9%**	**4.0%**	**6.2%**
Capital stock	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%
Share premium	2.6%	2.6%	3.1%	3.2%	3.3%	3.2%	3.2%	3.1%	3.1%
Retained earnings	4.0%	5.1%	2.0%	-2.1%	-2.1%	-1.2%	0.2%	2.1%	4.3%
Accumulated other comprehensive income	2.5%	0.1%	-0.5%	-2.4%	-2.3%	-2.2%	-2.1%	-1.9%	-1.8%
Treasury shares	0.0%	0.0%	-0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total equity attributable to equity owners of the parent	**9.8%**	**8.4%**	**5.2%**	**-0.7%**	**-0.4%**	**0.4%**	**1.9%**	**4.0%**	**6.2%**
Non-controlling interests	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total Liabilities	**90.2%**	**91.6%**	**94.8%**	**100.6%**	**100.4%**	**99.6%**	**98.1%**	**96.0%**	**93.8%**
Non-current liabilities	**39.1%**	**38.8%**	**40.2%**	**46.9%**	**47.3%**	**45.2%**	**44.0%**	**43.6%**	**42.2%**
Non-current provisions	8.9%	10.0%	11.0%	12.2%	12.4%	12.1%	12.0%	11.8%	11.7%
Long-term financing liabilities	8.2%	6.5%	7.2%	12.1%	11.8%	10.7%	9.8%	9.7%	8.9%
Non-current contract liabilities	14.6%	13.7%	14.8%	14.9%	15.2%	14.7%	14.7%	14.5%	14.3%
Non-current other financial liabilities	6.1%	7.0%	6.6%	7.0%	7.1%	6.9%	6.9%	6.8%	6.7%
Non-current other liabilites	0.3%	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Deffered tax liabilities	0.9%	1.1%	0.3%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
Non-current deffered income	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Current liabilities	**51.0%**	**52.4%**	**54.5%**	**53.8%**	**53.1%**	**54.4%**	**54.0%**	**52.4%**	**51.6%**
Current provisions	5.7%	6.4%	5.6%	5.4%	5.5%	5.4%	5.3%	5.3%	5.2%
Short-term financing liabilities	2.0%	1.3%	1.7%	4.4%	0.8%	1.5%	1.7%	0.8%	0.9%
Trade liabilities	12.2%	14.1%	12.9%	9.7%	11.8%	13.5%	13.3%	12.9%	12.6%
Current contract liabilities	23.7%	22.8%	23.1%	25.9%	26.4%	25.7%	25.5%	25.3%	24.8%
Current other financial liabilities	1.9%	2.1%	2.3%	2.6%	2.6%	2.6%	2.6%	2.5%	2.5%
Current other liabilities	3.6%	4.6%	6.0%	2.6%	2.6%	2.5%	2.5%	2.5%	2.5%
Current tax liabilities	1.4%	0.6%	2.4%	2.7%	2.8%	2.7%	2.7%	2.6%	2.6%
Current deffered income	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Disposal group of liabilities classified as held for sale	0.1%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Appendix 2 - Income Statement

In million €	FY17	FY18	FY19	FY20 F	FY21 F	FY22 F	FY23 F	FY24 F	FY25 F	CAGR
Revenue	**59,022**	**63,707**	**70,478**	39,030	45,391	56,725	59,902	62,075	65,535	10.9%
Cost of sales, exclduing D&A exp.	(49,851)	(52,476)	(57,046)	(34,142)	(39,252)	(47,636)	(49,705)	(51,073)	(53,461)	9.4%
Gross Margin	**9,171**	**11,231**	**13,432**	**4,888**	**6,139**	**9,090**	**10,198**	**11,002**	**12,074**	19.8%
Selling expenses	(872)	(861)	(908)	(781)	(689)	(861)	(909)	(942)	(994)	5.0%
Administrative expenses	(1,567)	(1,574)	(5,217)	(1,951)	(1,589)	(1,872)	(1,857)	(1,800)	(1,769)	-1.9%
R&D expenses	(2,807)	(3,217)	(3,358)	(1,896)	(2,205)	(2,755)	(2,909)	(2,953)	(3,085)	10.2%
Other income	981	1,656	370	623	724	905	956	990	1,046	10.9%
Other expenses	(336)	(182)	(356)	(143)	(206)	(257)	(272)	(281)	(297)	15.7%
Share of profit from investments accounted for under the equity r	311	330	299	173	222	278	293	304	321	13.1%
Other income from investments	82	109	4	88	102	128	135	140	148	10.9%
EBITDA	**4,963**	**7,492**	**4,266**	**1,001**	**2,500**	**4,655**	**5,635**	**6,460**	**7,443**	49.4%
Depreciation & Amortization	(2,298)	(2,444)	(2,927)	(2,927)	(2,335)	(2,599)	(2,521)	(2,506)	(2,644)	-2.0%
EBIT	**2,665**	**5,048**	**1,339**	**(1,926)**	**164**	**2,056**	**3,114**	**3,954**	**4,798**	132.4%
Interest income	189	208	228	126	147	183	194	201	212	10.9%
Interest expense	(517)	(440)	(339)	(252)	(237)	(237)	(213)	(189)	(189)	-5.6%
Other financial result	1,489	(531)	(164)	-	-	-	-	-	-	
EBT	**3,826**	**4,285**	**1,064**	**(2,051)**	**74**	**2,002**	**3,095**	**3,965**	**4,821**	183.9%
Income taxes	(1,462)	(1,274)	(2,389)	-	(18)	(479)	(740)	(948)	(1,153)	182.4%
Net income	**2,364**	**3,011**	**(1,325)**	**(2,051)**	**56**	**1,524**	**2,355**	**3,017**	**3,669**	184.4%

Common-Size IS (% Revenue)	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25 F
Revenue	**100.0%**	**100.0%**	**100.0%**	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of sales	-84.5%	-82.4%	-80.9%	-87.5%	-86.5%	-84.0%	-83.0%	-82.3%	-81.6%
Gross Margin	**15.5%**	**17.6%**	**19.1%**	**12.5%**	**13.5%**	**16.0%**	**17.0%**	**17.7%**	**18.4%**
Selling expenses	-1.5%	-1.4%	-1.3%	-2.0%	-1.5%	-1.5%	-1.5%	-1.5%	-1.5%
Administrative expenses	-2.7%	-2.5%	-7.4%	-5.0%	-3.5%	-3.3%	-3.1%	-2.9%	-2.7%
R&D expenses	-4.8%	-5.0%	-4.8%	-4.9%	-4.9%	-4.9%	-4.9%	-4.8%	-4.7%
Other income	1.7%	2.6%	0.5%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
Other expenses	-0.6%	-0.3%	-0.5%	-0.4%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%
Share of profit from investments accounted for under the equity r	0.5%	0.5%	0.4%	0.4%	0.5%	0.5%	0.5%	0.5%	0.5%
Other income from investments	0.1%	0.2%	0.0%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
EBITDA	**8.4%**	**11.8%**	**6.1%**	**2.6%**	**5.5%**	**8.2%**	**9.4%**	**10.4%**	**11.4%**
Depreciation & Amortization	-3.9%	-3.8%	-4.2%	-7.5%	-5.1%	-4.6%	-4.2%	-4.0%	-4.0%
EBIT	**4.5%**	**7.9%**	**1.9%**	**-4.9%**	**0.4%**	**3.6%**	**5.2%**	**6.4%**	**7.3%**
Interest income	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Interest expense	-0.9%	-0.7%	-0.5%	-0.6%	-0.5%	-0.4%	-0.4%	-0.3%	-0.3%
Other financial result	2.5%	-0.8%	-0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
EBT	**6.5%**	**6.7%**	**1.5%**	**-5.3%**	**0.2%**	**3.5%**	**5.2%**	**6.4%**	**7.4%**
Income taxes	-2.5%	-2.0%	-3.4%	0.0%	0.0%	-0.8%	-1.2%	-1.5%	-1.8%
Net income	**4.0%**	**4.7%**	**-1.9%**	**-5.3%**	**0.1%**	**2.7%**	**3.9%**	**4.9%**	**5.6%**

Appendix 3 - Cash Flow Statement

In million €	FY17	FY18	FY19	FY20 F	FY21 F	FY22 F	FY23 F	FY24 F	FY25 F
Net Income	**2,364**	**3,011**	**(1,325)**	**(2,051)**	**56**	**1,524**	**2,355**	**3,017**	**3,669**
Δ Inventories	(2,112)	(671)	117	108	(3,450)	(4,813)	1,421	2,279	967
Δ Trade Receivables	(47)	(881)	29	(600)	(623)	(1,180)	(236)	72	131
Δ Trade Payable	829	2,294	(1,625)	167	2,148	2,234	(160)	(287)	(45)
Other (Payments)/ Receivements	1,691	(1,375)	3,695	-	-	-	-	-	-
Δ Working Capital	**361**	**(633)**	**2,216**	**(324)**	**(1,924)**	**(3,758)**	**1,025**	**2,064**	**1,052**
D&A	**2,298**	**2,444**	**2,927**	**2,927**	**2,335**	**2,599**	**2,521**	**2,506**	**2,644**
Interest (net)	**(24)**	**126**	**75**	**-**	**-**	**-**	**-**	**-**	**-**
Valuation adjustment	(1,341)	(1,849)	600	-	-	-	-	-	-
Results on disposals of non-current assets	(773)	(261)	(77)	-	-	-	-	-	-
Results of investments accounted for under the equity method	(311)	(330)	(299)	-	-	-	-	-	-
Change in current and non-current provisions	1,018	1,952	475	-	-	-	-	-	-
Contribution to plan assets	(458)	(2,519)	(1,752)	-	-	-	-	-	-
Income tax paid	(152)	(897)	(1,476)	-	(18)	(479)	(740)	(948)	(1,153)
Income tax expense	1,462	1,274	2,389	-	18	479	740	948	1,153
Operational Cash Flow	**4,444**	**2,318**	**3,753**	**551**	**467**	**365**	**5,900**	**7,588**	**7,365**
Investing activities									
CAPEX	(2,558)	(2,285)	(2,340)	(1,922)	(1,701)	(2,125)	(2,245)	(2,450)	(2,718)
Proceeds from disposals of intangible assets, PP&E and investment	177	213	112	-	-	-	-	-	-
Acquisition of subsidiaries, joint ventures, businesses and non-controlling	(23)	129	8	-	-	-	-	-	-
Proceeds from disposals of subsidiaries (net of cash)	377	-	-	-	-	-	-	-	-
Payments from disposals of investments accounted for under the equity	(913)	(707)	(952)	-	-	-	-	-	-
Proceeds from disposals of investments accounted for under the equity	532	597	358	-	-	-	-	-	-
Dividends paid by companies at equity	218	191	210	-	-	-	-	-	-
Disposals of non-current assets and disposal groups classified as assets	893	320	137	-	-	-	-	-	-
Payments for investments in securities	(3,767)	(2,010)	(2,861)	-	-	-	-	-	-
Proceeds from disposals of securities	2,534	1,917	2,464	-	-	-	-	-	-
Investing cash flow	**(2,530)**	**(1,635)**	**(2,864)**	**(1,922)**	**(1,701)**	**(2,125)**	**(2,245)**	**(2,450)**	**(2,718)**
Financing activities									
Δ Financial liabilities	1,284	(2,308)	(160)	345	(4,583)	(86)	(818)	(939)	(644)
Cash distribution to Airbus SE shareholders	(1,043)	(1,161)	(1,280)	-	-	(609)	(730)	(873)	(1,046)
Dividends paid to non-controlling interests	(3)	-	-	-	-	-	-	-	-
Payments for liability for puttable instruments	-	179	319	-	-	-	-	-	-
Changes in capital and non-controlling interests	83	117	194	-	-	-	-	-	-
Changes in treasury shares	-	(49)	(31)	-	-	-	-	-	-
Cash (used for) for financing activities	**321**	**(3,222)**	**(958)**	**345**	**(4,583)**	**(695)**	**(1,547)**	**(1,812)**	**(1,690)**
Effect of foreign exchange rate changes on cash and cash and equivalents	(374)	(54)	(45)	-	204	-	90	279	-
Cash Flow	**1,861**	**(2,593)**	**(114)**	**(1,026)**	**(5,613)**	**(2,456)**	**2,198**	**3,605**	**2,958**

Common-Size	FY17	FY18	FY19	FY20 F	FY21 F	FY22 F	FY23 F	FY24 F	FY25 F
Net Income	53.2%	129.9%	-35.3%	-372.2%	12.0%	417.7%	39.9%	39.8%	49.8%
Δ Inventories	-47.5%	-28.9%	3.1%	19.6%	-739.0%	-1319.5%	24.1%	30.0%	13.1%
Δ Trade Receivables	-1.1%	-38.0%	0.8%	-108.8%	-133.4%	-323.4%	-4.0%	1.0%	1.8%
Δ Trade Payable	18.7%	99.0%	-43.3%	30.3%	460.1%	612.5%	-2.7%	-3.8%	-0.6%
Other (Payments)/ Receivements	38.1%	-59.3%	98.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Δ Working Capital	8.1%	-27.3%	59.0%	-58.8%	-412.3%	-1030.4%	17.4%	27.2%	14.3%
D&A	51.7%	105.4%	78.0%	531.0%	500.2%	712.7%	42.7%	33.0%	35.9%
Interest (net)	-0.5%	5.4%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Valuation adjustment	-30.2%	-79.8%	16.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Results on disposals of non-current assets	-17.4%	-11.3%	-2.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Results of investments accounted for under the equity method	-7.0%	-14.2%	-8.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Change in current and non-current provisions	22.9%	84.2%	12.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Contribution to plan assets	-10.3%	-108.7%	-46.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Income tax paid	-3.4%	-38.7%	-39.3%	0.0%	-3.9%	-131.2%	-12.5%	-12.5%	-15.6%
Income tax expense	32.9%	55.0%	63.7%	0.0%	3.9%	131.2%	12.5%	12.5%	15.6%
Operational Cash Flow	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Investing activities									
CAPEX	-57.6%	-98.6%	-62.4%	-348.6%	-364.3%	-582.7%	-38.0%	-32.3%	-36.9%
Proceeds from disposals of intangible assets, PP&E and investment	4.0%	9.2%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Acquisition of subsidiaries, joint ventures, businesses and non-	-0.5%	5.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Proceeds from disposals of subsidiaries (net of cash)	8.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Payments from disposals of investments accounted for under the equity	-20.5%	-30.5%	-25.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Proceeds from disposals of investments accounted for under the equity	12.0%	25.8%	9.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Dividends paid by companies at equity	4.9%	8.2%	5.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Disposals of non-current assets and disposal groups classified as assets	20.1%	13.8%	3.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Payments for investments in securities	-84.8%	-86.7%	-76.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Proceeds from disposals of securities	57.0%	82.7%	65.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Investing cash flow	**-56.9%**	**-70.5%**	**-76.3%**	**-348.6%**	**-364.3%**	**-582.7%**	**-38.0%**	**-32.3%**	**-36.9%**
Financing activities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Δ Financial liabilities	28.9%	-99.6%	-4.3%	62.5%	-981.9%	-23.5%	-13.9%	-12.4%	-8.7%
Cash distribution to Airbus SE shareholders	-23.5%	-50.1%	-34.1%	0.0%	0.0%	-167.1%	-12.4%	-11.5%	-14.2%
Dividends paid to non-controlling interests	-0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Payments for liability for puttable instruments	0.0%	7.7%	8.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Changes in capital and non-controlling interests	1.9%	5.0%	5.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Changes in treasury shares	0.0%	-2.1%	-0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash (used for) for financing activities	**7.2%**	**-139.0%**	**-25.5%**	**62.5%**	**-981.9%**	**-190.6%**	**-26.2%**	**-23.9%**	**-22.9%**
Effect of foreign exchange rate changes on cash and cash and	-8.4%	-2.3%	-1.2%	0.0%	43.8%	0.0%	1.5%	3.7%	0.0%
Cash Flow	**41.9%**	**-111.9%**	**-3.0%**	-186.1%	-1202.4%	-673.3%	37.3%	47.5%	40.2%

Appendix 4 - Key Financial Ratios

Key Financial Ratios	2020F	2021F	2022F	2023F	2024F	2025F
Liquidity Ratios						
Current Ratio (x)	1.01	1.02	1.02	1.04	1.08	1.11
Quick Ratio (x)	0.26	0.19	0.16	0.20	0.26	0.31
Cash Ratio (x)	0.18	0.08	0.04	0.08	0.14	0.19
Times Interest Earned	-7.64	0.69	8.68	14.62	20.91	25.38
Efficiency Ratios						
Total Assets Turnover (x)	0.35	0.42	0.51	0.53	0.54	0.56
Fixed Asset Turnover	1.19	1.41	1.80	1.92	2.00	2.11
Collection Period (days)	50.00	48.00	46.00	45.00	43.00	40.00
Inventory Turnover (x)	0.91	0.96	1.04	1.12	1.22	1.30
Days in Inventory (days)	400.00	380.00	350.00	325.00	300.00	280.00
Payables Turnover (x)	3.20	3.32	3.40	3.30	3.44	3.64
Payables Period (days)	115.00	120.00	116.00	110.00	105.00	100.00
Operating Cycle (days)	450.00	428.00	396.00	370.00	343.00	320.00
Cash Cycle (days)	335.00	308.00	280.00	260.00	238.00	220.00
Profitability Ratios						
Gross Profit Margin (%)	12.52%	13.52%	16.02%	17.02%	17.72%	18.42%
EBITDA Margin (%)	2.57%	5.51%	8.21%	9.41%	10.41%	11.36%
EBIT Margin (%)	-4.93%	0.36%	3.62%	5.20%	6.37%	7.32%
Net Profit Margin (%)	-5.26%	0.12%	2.69%	3.93%	4.86%	5.60%
ROA (%)	-1.84%	0.05%	1.36%	2.08%	2.64%	3.16%
ROCE (%)	-3.74%	0.32%	4.02%	6.00%	7.28%	8.54%
ROE (%)	-4.13%	0.11%	3.07%	4.74%	6.07%	7.38%
ROIC (%)	-2.60%	0.23%	2.86%	4.28%	5.20%	6.12%
Solvency Ratios						
Debt Ratio (%)	16.4%	12.5%	12.4%	11.5%	10.6%	9.9%
Long-term Debt Ratio (%)	12.0%	11.7%	10.9%	9.8%	9.7%	8.9%
Debt to Equity Book Ratio (x)	- 25.56	- 30.06	30.27	5.96	2.61	1.57
Debt to Equity Mkt Ratio (x)	0.37	0.28	0.28	0.26	0.24	0.23
Equity Multiplier (x)	2.26	2.22	2.23	2.27	2.29	2.32
Debt to EBITDA	18.39	5.53	2.95	2.29	1.86	1.52
Net Debt to EBITDA	1.95	1.19	1.15	0.42	-0.34	-0.78
Interest Coverage Ratio (x)	- 7.64	0.69	8.68	14.62	20.91	25.38

Appendix 5 - Forecasting Assumptions

Income Statement Assumptions							
In million €	FY20 F	FY21 F	FY22 F	FY23 F	FY24 F	FY25 F	Assumption
Revenue	39,030	45,391	56,725	59,902	62,075	65,535	**CA Revenues t = (Units produced*commercial price)**. The Commercial aircraft prices is based on the last published catalog dated from 2018 and the Production rates based on the Company's updated projections. **Defense Revenues t = Def. Rev t-1*(1+YoY Defense Budget growth)**. **Heli Revenues t= Heli Rev. t-1*(1+(60%*YoY Defense Budget growth + 40%*YoY Global GDP growth))**. AIR does not publish commercial catalog available nor production rates D&S and Helicopters segments.
y-o-y growth (%)	***-44.6%***	***16.3%***	***25.0%***	***5.6%***	***3.6%***	***5.6%***	
Cost of sales	(34,142)	(39,252)	(47,636)	(49,705)	(51,073)	(53,461)	As the Company does not disclose detailed Cost of Goods Solds on its annual reports, COGS are computed through the Gross Profit Margin progress. The GPM is expected to increase at 19.8% CAGR, meaning the Company will be progressively more efficient during the forecast period.
% Revenue	***-87.5%***	***-86.5%***	***-84.0%***	***-83.0%***	***-82.3%***	***-81.6%***	
Selling expenses	(781)	(689)	(861)	(909)	(942)	(994)	Between 2021YE-2025YE, Selling expenses are computed assuming the historical average rate as %Revenues between 2017YE-2019YE. As the name states, these expenses are linked to the revenues performance of the Company.
% Revenue	***-2.0%***	***-1.5%***	***-1.5%***	***-1.5%***	***-1.5%***	***-1.5%***	
Administrative expenses	(1,951)	(1,589)	(1,872)	(1,857)	(1,800)	(1,769)	Decreases 20bps annually as the Company will slash 15,000 jobs starting in 2021YE.
% Revenue	***-5.0%***	***-3.5%***	***-3.3%***	***-3.1%***	***-2.9%***	***-2.7%***	
R&D expenses	(1,896)	(2,205)	(2,755)	(2,909)	(2,953)	(3,085)	Historical average as % revenues
% Revenue	***-4.9%***	***-4.9%***	***-4.9%***	***-4.9%***	***-4.8%***	***-4.7%***	
Other income	623	724	905	956	990	1,046	Historical average as % revenues
% Revenue	***1.6%***	***1.6%***	***1.6%***	***1.6%***	***1.6%***	***1.6%***	
Other expenses	(143)	(206)	(257)	(272)	(281)	(297)	Historical average as % revenues
% Revenue	***-0.5%***	***-0.5%***	***-0.5%***	***-0.5%***	***-0.5%***	***-0.5%***	
Share of profit from investments accounted for under the equity method	191	222	278	293	304	321	Historical average as % revenues
% Revenue	***0.5%***	***0.5%***	***0.5%***	***0.5%***	***0.5%***	***0.5%***	
Other income from investmer	88	102	128	135	140	148	Historical average as % revenues
% Revenue	***0.2%***	***0.2%***	***0.2%***	***0.2%***	***0.2%***	***0.2%***	
Interest income	126	147	183	194	201	212	Historical average as % revenues
% Revenue	***0.3%***	***0.3%***	***0.3%***	***0.3%***	***0.3%***	***0.3%***	
Interest expense	(252)	(237)	(237)	(213)	(189)	(189)	**Interest expense t = Σbonds coupons t.** The Company does not disclose the interest rate of its Financial loans nor the Public Credit line conceeded information.
% Revenue	***-0.6%***	***-0.5%***	***-0.4%***	***-0.4%***	***-0.3%***	***-0.3%***	
Other financial result	-	-	-	-	-	-	Hard to predict
% Revenue	***0.0%***	***0.0%***	***0.0%***	***0.0%***	***0.0%***	***0.0%***	
Netherlands	25.0%	21.7%	21.7%	21.7%	21.7%	21.7%	
France	32.0%	28.4%	25.8%	25.8%	25.8%	25.8%	
Income tax rate Germany	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	According to the 2019 Annual Report, these are the predicted income tax rate in the mentioned countries.
Spain	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	
UK	17.0%	17.0%	17.0%	17.0%	17.0%	17.0%	
Effective Tax rate	**25.8%**	**24.4%**	**23.9%**	**23.9%**	**23.9%**	**23.9%**	

BS Assumptions							
In million €	FY20 F	FY21 F	FY22 F	FY23 F	FY24 F	FY25 F	Assumption
Non-Current Assets							
Intangible assets	-3.7%	-2.4%	-1.8%	-1.1%	-0.2%	0.3%	See Capex Appendix
PP&E	-2.4%	-1.5%	-1.2%	-0.7%	-0.1%	0.2%	See Capex Appendix
Investment property	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Investments accounted for under the equity method	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Other investments and other long-term financial assets	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Non-current contract assets	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Non-current other financial assets	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Non-current other assets	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Deferred tax assets	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Non-current securitites	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Current Assets							
Inventories	-0.3%	9.2%	11.8%	-3.1%	-5.2%	-2.3%	See NWC appendix
Accounts Receivables	12.6%	11.6%	19.8%	3.3%	-1.0%	-1.8%	See NWC appendix
Current portion of other long-term financial assets	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Current contract assets	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Current other financial assets	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Current other assets	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Current tax assets	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Current securities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Equity							
Share Capital	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	No issuance of new shares is expected
Share premium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to 2018F nominal value
Retained Earnings	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1- RE t= RE t-1 + NI t -Div t-1 No repurchase of treasury share predicted
Accumulated other comprehensive income	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Treasury shares	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Non-Current Liabilities							
Non-current provisions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Long-term financing liabilities	13,465	12,909	12,032	11,034	11,037	10,283	See Debt Appendix
Non-current contract liabilities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Non-current other financial liabilities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Non-current other liabilites	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Deffered tax liabilities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Non-current deffered income	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Current Liabilites							
Current provisions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Short-term financing liabilities	4,950	922	1,713	1,893	952	1,061	See Debt Appendix
Trade liabilities	1.6%	20.0%	17.3%	-1.1%	-1.9%	-0.3%	See NWC appendix
Current contract liabilities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Current other financial liabilities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Current other liabilities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Current tax liabilities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value
Current deffered income	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Equal to FY20 HY nominal value

Appendix 6 - Revenues

Commercial Aircraft Revenues:

	FY20 F*		FY21 F		FY22 F		FY23 F		FY24 F		FY25 F	
in Units	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**
Narrow-body	90	240	180	480	240	720	240	720	240	720	240	720
A330	0	12	0	24	12	24	12	24	12	24	12	24
A350	6	36	12	72	12	72	12	72	12	72	12	72
Annual productio	**96**	**288**	**192**	**576**	**264**	**816**	**264**	**816**	**264**	**816**	**264**	**816**

*semi-annual

	FY20 F*		FY21 F		FY22 F		FY23 F		FY24 F		FY25 F	
in Units	**Average**	**Reasonable**	**Average**	**Reasonable**	**Average**	**Reasonable**	**Average**	**Reasonable**	**Average**	**Reasonable**	**Average**	**Reasonable**
Narrow-body	165	180	330	300	480	350	480	420	480	460	480	500
A330	6	9	12	18	18	18	18	18	18	18	18	20
A350	21	21	42	45	42	42	42	45	42	48	42	52
Annual deliveries	**192**	**210**	**384**	**363**	**540**	**410**	**540**	**483**	**540**	**526**	**540**	**572**

*semi-annual

	FY20 F*		FY21 F		FY22 F		FY23 F		FY24 F		FY25 F	
Revenue, USD Mi	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**	**Min**	**Max**
Narrow-body	9,256	24,682	18,511	49,363	24,682	74,045	24,682	74,045	24,682	74,045	24,682	74,045
A330	-	3,122	-	6,243	3,122	6,243	3,122	6,243	3,122	6,243	3,122	6,243
A350	2,052	12,310	4,103	24,620	4,103	24,620	4,103	24,620	4,103	24,620	4,103	24,620
Revenue	**11,307**	**40,113**	**22,615**	**80,227**	**31,907**	**104,909**	**31,907**	**104,909**	**31,907**	**104,909**	**31,907**	**104,909**

*semi-annual

USD/EUR	**0.833**		**0.813**		**0.813**		**0.806**		**0.787**		**0.787**	
Total Revenue	**11,823**		**30,096**		**40,778**		**43,393**		**45,242**		**48,116**	
Weight Min	90%		75%		75%		70%		65%		60%	
Max	10%		25%		25%		30%		35%		40%	

Until 2022YE		
Production rate per month	Min	Max
Narrow-body	15	40
A330	0	2
A350	1	6

Average Price, USD millions	
Narrow body	103
A330	260
A350	342

2022YE onwards		
Production rate per month	Min	Max
Narrow-body	20	60
A330	1	2
A350	1	6

Defense & Space Revenues:

Airbus D&S	**FY20 F**	**FY21 F**	**FY22 F**	**FY23 F**	**FY24 F**	**FY25 F**
Military aircraft	5,729	5,953	6,233	6,519	6,780	7,051
	56%	*56%*	*56%*	*56%*	*56%*	*56%*
Space systems	2,921	3,035	3,177	3,324	3,457	3,595
	24%	*24%*	*24%*	*24%*	*24%*	*24%*
Connected intelligence & other	2,584	2,685	2,811	2,940	3,058	3,180
	20%	*20%*	*20%*	*20%*	*20%*	*20%*
Internal revenue	-	-	-	-	-	-
Total	**11,234**	**11,672**	**12,221**	**12,783**	**13,294**	**13,826**
USD/EUR	**.83**	**.81**	**.81**	**.81**	**.79**	**.79**
Total in EUR	**9,362**	**9,490**	**9,936**	**10,309**	**10,468**	**10,887**

Helicopters Revenues:

Airbus Helicopters	**FY20 F**	**FY21 F**	**FY22 F**	**FY23 F**	**FY24 F**	**FY25 F**
Platforms	46%	40%	37%	35%	39%	43%
Services	54%	60%	63%	65%	61%	57%
Total Revenues, EUR	**5,595**	**5,805**	**6,011**	**6,200**	**6,365**	**6,532**
Platforms	2,574	2,322	2,224	2,170	2,483	2,809
Services	3,021	3,483	3,787	4,030	3,883	3,724

Appendix 7 – CAPEX

CAPEX								
In million €	FY20 F	FY21 F	FY22 F	FY23 F	FY24 F	FY25 F	Assumption	Rate
CAPEX	**(1,922)**	**(1,701)**	**(2,125)**	**(2,245)**	**(2,450)**	**(2,718)**		
CAPEX PP&E	(769)	(680)	(850)	(898)	(980)	(1,087)	Non-disclosed information	**40%**
CAPEX Intangibles	(1,153)	(1,020)	(1,275)	(1,347)	(1,470)	(1,631)	Non-disclosed information	**60%**
CAPEX as % revenues	**-4.9%**	**-3.7%**	**-3.7%**	**-3.7%**	**-3.9%**	**-4.1%**	Assuming the FY17-FY19 historical average of Total Capex to Revenues Ratio for FY20-FY23. Increase of +200bps annually FY24 onwards	-3.7%

In million €	FY20 F	FY21 F	FY22 F	FY23 F	FY24 F	FY25 F	Assumption	Rate
Total D&A	**2,927**	**2,335**	**2,599**	**2,521**	**2,506**	**2,644**		
PP&E	1,171	934	1,040	1,008	1,003	1,058	Non-disclosed information	**40%**
Intagible assets	1,756	1,401	1,560	1,512	1,504	1,587	Non-disclosed information	**60%**
D&A/Total CAPEX	**152.3%**	**137.3%**	**122.3%**	**112.3%**	**102.3%**	**97.3%**		

In million €	FY20 F	FY21 F	FY22 F	FY23 F	FY24 F	FY25 F
Initial PP&E	16,936	16,534	16,280	16,091	15,980	15,958
CAPEX (+)	769	680	850	898	980	1,087
Depreciations (-)	(1,171)	(934)	(1,040)	(1,008)	(1,003)	(1,058)
Ending PP&E	**16,534**	**16,280**	**16,091**	**15,980**	**15,958**	**15,987**

In million €	FY20 F	FY21 F	FY22 F	FY23 F	FY24 F	FY25 F
Initial Intangible	16,484	15,881	15,500	15,216	15,050	15,016
CAPEX (+)	1,153	1,020	1,275	1,347	1,470	1,631
Amortizations (-)	(1,756)	(1,401)	(1,560)	(1,512)	(1,504)	(1,587)
Ending Intangibles	**15,881**	**15,500**	**15,216**	**15,050**	**15,016**	**15,060**

Appendix 8 – Debt

Airbus Financial Debt:

In million €	FY20 F	FY21 F	FY22 F	FY23 F	FY24 F	FY25 F
LT financing liabilities	**13,465**	**12,909**	**12,032**	**11,034**	**11,037**	**10,283**
Bonds and commercial papers	11,606	11,196	10,318	9,318	9,318	8,568
Liabilities to financial institutions	425	433	441	450	459	468
Loans	145	-	-	-	-	-
Lease liablities	1,289	1,280	1,273	1,266	1,260	1,247
Others	-	-	-	-	-	-
ST financing liabilities	**4,950**	**922**	**1,713**	**1,893**	**952**	**1,061**
Bonds and commercial papers	3,011	-	879	1,000	-	-
Liabilities to financial institutions	222	425	433	441	450	459
Loans	134	145	-	-	-	-
Lease liablities	302	352	402	452	502	602
Others	1,281	-	-	-	-	-
Total	**18,415**	**13,831**	**13,745**	**12,928**	**11,989**	**11,345**

Bonds' Coupon payment schedule:

Bonds	Amount Outstanding	Maturity	FY20 F	FY21 F	FY22 F	FY23 F	FY24 F	FY25 F	>5Y
USD Bond 10Y	878,503,031	Apr 2023	879	879	879	-	-	-	-
EMTN 10Y	1,000,000,000	Apr 2024	1,000	1,000	1,000	1,000	-	-	-
EMTN 15Y	500,000,000	Oct 2029	500	500	500	500	500	500	500
EMTN 10Y	600,000,000	May 2026	600	600	600	600	600	600	600
EMTN 15Y	900,000,000	May 2031	900	900	900	900	900	900	900
Exchangeable bonds 5Y	1,077,900,000	jun/21	1,078	-	-	-	-	-	-
USD Bond 10Y	658,877,273	Apr 2027	659	659	659	659	659	659	659
USD Bond 30Y	658,877,273	Apr 2047	659	659	659	659	659	659	659
AIR 1.625 07-Apr-2025 '25 MTN	750,000,000	Apr 2025	750	750	750	750	750	750	-
AIR 2.000 07-Apr-2028 '28 MTN	750,000,000	Apr 2028	750	750	750	750	750	750	750
AIR 2.375 07-Apr-2032 '32 MTN	1,000,000,000	Apr 2032	1,000	1,000	1,000	1,000	1,000	1,000	1,000
AIR 1.375 09-Jun-2026 '26 MTN	1,250,000,000	09/06/2026	1,250	1,250	1,250	1,250	1,250	1,250	1,250
AIR 1.625 09-Jun-2030 '30 MTN	1,250,000,000	09/06/2030	1,250	1,250	1,250	1,250	1,250	1,250	1,250
AIR 2.375 09-Jun-2040 '40 MTN	1,000,000,000	09/06/2040	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Total	**16,524,157,577**		**12,274**	**11,196**	**11,196**	**10,318**	**9,318**	**9,318**	**8,568**

Appendix 9 – BoD composition and Remuneration

Board of Directors					
Name	**Independent**	**Position**	**Compensation in 2019**	**Since**	**Term End**
Guillaume Faury	No	CEO	2,108,352 €	2019	2022
Denis Ranque	Yes	Chairman of BoD	311,000 €	2013	2020
Victor Chu	Yes	Non-Executive BoD Member	207,000 €	2018	2021
Jean-Pierre Clamadieu	Yes	Non-Executive BoD Member	219,176 €	2018	2021
Ralph D. Crosby, Jr.	Yes	Non-Executive BoD Member	298,500 €	2013	2020
Lord Drayson	Yes	Non-Executive BoD Member	225,000 €	2017	2020
Catherine Guillouard	Yes	Non-Executive BoD Member	222,765 €	2016	2022
Hermann-Josef Lamberti	Yes	Non-Executive BoD Member	200,235 €	2007	2020
Maria Amapro Moraleda Martínez	Yes	Non-Executive BoD Member	235,000 €	2015	2021
Calaudia Nemat	Yes	Non-Executive BoD Member	174,500 €	2016	2022
René Obermann	Yes	Non-Executive BoD Member	202,000 €	2018	2022
Carlos Tavares	Yes	Non-Executive BoD Member	145,000 €	2016	2022
Total			**4,548,528 €**		

Appendix 10 – Company's Strategic enablers

#	Enabler	Description
1	**Europe**	Airbus is an European company with more than 100,000 employees and a strong industrial footprint in the region. Also, Airbus is a key enabler to European sovereignty through its defense and space solutions.
2	**Globalization**	Airbus has a world-wide industrial presence. In the USA and North America, the production ramp-up continues. In China, new production plants have been recently built due to a memorandum with the Chinese government.
3	**Environment**	Airbus believes a future sustainable aviation model is achievable, so it has developed a clear overall strategy on environment, in which the priority is to progressively decarbonize the fleet and reduce other nuisances, including noise issues, NOx and other particulates. Additionally, Airbus committed to some of the United Nations' Sustainable Development Goals (UNSDGs) and to the Air Transportation Action Group (ATAG) industry goals of halving CO_2 emissions by 2050, in line with the Paris Agreement Targets. In other product areas, Airbus is contributing to enable actions against climate change. Over the last years, Airbus has been cooperating with the European Space Agency (ESA on the development of Earth observation satellites and geospatial solutions which provide highly sophisticated monitoring capabilities for climate change, deforestation, and other natural disasters. Finally, Airbus launched the "High5+" in 2019, a cross-divisional plan to reduce the footprint of all Airbus' activities globally and reach out to the suppliers. Designed to last until 2030, the plan set in absolute value compared to 2015YE levels to reduce energy and water consumption, CO_2 emissions and waste production.
4	**Ethics, Compliance & Reputation**	Airbus has the ambition to be known as a company with "integrity inside", with integrity in its workers, partners and suppliers. This integrity is critical for the company's reputation, as it means Airbus does business in the correct way to ensure its stakeholders' confidence. Consequently, ethics and compliance are the center of all Airbus' activities, meaning that the company constantly improves its Ethics and Compliance program to ensure effective processes and procedures are in place to manage business ethics, anti-corruption compliance, export control compliance and data protection.
5	**Safety & Security**	Airbus' number one priority is to ensure the continued safe transport of everyone, and everything, that flies aboard an Airbus product.
6	**"Our" People**	Airbus' receipt of success and competitiveness has two key ingredients: Competences and engagement. Airbus is committed to attracting and retaining engaged people, with the right skills, mind-set and behavior.
7	**Digitalization**	Digitalization will support Airbus' transformation by focusing on five main axes: **A)** enabling high employee engagement; **B)** digital operational excellence; **C)** mastering its product data value chain and turning product data into insight; **D)** capturing the end-user experience; **E)** driving its business agility. In 2018YE, **D&S** with **Heli** launched the **SmartForce** suite of services to enable military operators to exploit the data gathered by their aircraft to enhance operational safety, boost mission availability and reduce support costs. Also, in 2017, Airbus launched **Skywise**, a data platform in collaboration with pioneers in data integration and advanced analytics to improve major aviation players' operational performance and business results and to support their own digital transformation.
8	**Competitiveness**	To provide the best product to its customers and face strong competition, AIR is permanently boosting its competitiveness by preparing its short-, mid- and long-term industrial transformation through the implementation of Digital Design Manufacturing and Services (**DDMS**), strengthening and optimizing selected strategic value chain areas and reviewing sourcing strategy, and leveraging the military portfolio.
9	**Technology & Innovation**	To keep at the forefront of aerospace technology, Airbus needs to innovate every day. Airbus prepares for the future by creating more sustainable and environmentally products that will use cutting-edge technology to respond to new challenges. Airbus is committed to the Flight Path 2050 targets, cutting CO_2 emissions by 75%, NOx emissions by 90% and noise emissions by 65% compared to 2000's levels. In 2019, Airbus started collaborating with other European aerospace companies to develop the next EU Aviation research program. Urban Air Mobility and a zero emission commercial aircraft are among the developing projects.
10	**Customer centricity**	Airbus continuously focuses on enhancing customer trust and loyalty, concentrating on both the performance and behaviors. This leads Airbus to improve customer satisfaction before, at, and after delivery, put customer intimacy at the center of Airbus strategy and actions and, to deliver increased support and service offering.

Appendix 11 - ESG

Environment	Knowing that the aviation industry represents about 2% of global human-induced CO_2, AIR has committed to important partnerships to tackle climate change, which set the following targets: to **reduce by 50% in total CO_2 emissions by 2050**, to improve the fuel efficiency per seat kilometer and to be carbon-neutral starting from 2020 onwards. AIR requires its suppliers to meet the same environmental and social responsibility standards as it sets for itself. AIR manages the environmental footprint across the entire production cycle in order to meet its targets. As a result, indicators such as waste, water and energy consumption have been improving. Airbus is developing a wide range of prototypes that can become the "Aircraft of the future" which have alternative propulsion systems and energy sources, and other innovative solutions.
Social	Airbus approach is aligned with the UN Guiding Principles and the UN Global Compact, as there is zero tolerance for human rights abuses within its business, operations and supply chain. Since the current CEO took the helm of the company, AIR entered a new chapter with several key transformations with a strategy designed to support, prioritize, accelerate and connects efforts across the company. This **Next Chapter** aims to create the right conditions and environment to deliver both short and long-term priorities, with a mind-set of Safety, Quality, Integrity and Compliance. People@Airbus, Customer@Heart and PeopleSafety@Work are some ideas explored by this strategy.

Appendix 12 – WACC and Terminal Growth Rate

Cost of Debt was computed as $\boldsymbol{\Sigma}[\left(\frac{\boldsymbol{Bond\ i\ Outstanding\ Amount}}{\boldsymbol{\Sigma\ Bonds\ Outstanding\ Amount}}\right) * \boldsymbol{Bond\ i\ Coupon\ Rate}]$.

Kd	FY20 F	FY21 F	FY22 F	FY23 F	FY24 F	FY25 F
USD Bond 10Y	0.20%	0.21%	0.21%	0.00%	0.00%	0.00%
EMTN 10Y	0.20%	0.21%	0.21%	0.23%	0.00%	0.00%
EMTN 15Y	0.09%	0.10%	0.10%	0.11%	0.12%	0.13%
EMTN 10Y	0.05%	0.05%	0.05%	0.06%	0.06%	0.07%
EMTN 15Y	0.11%	0.12%	0.12%	0.13%	0.14%	0.16%
Exchangeable bonds 5Y	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%
USD Bond 10Y	0.17%	0.19%	0.19%	0.20%	0.22%	0.24%
USD Bond 30Y	0.21%	0.23%	0.23%	0.25%	0.28%	0.30%
AIR 1.625 07-Apr-2025 '25 MTN	0.10%	0.11%	0.11%	0.12%	0.13%	0.00%
AIR 2.000 07-Apr-2028 '28 MTN	0.12%	0.13%	0.13%	0.15%	0.16%	0.18%
AIR 2.375 07-Apr-2032 '32 MTN	0.19%	0.21%	0.21%	0.23%	0.25%	0.28%
AIR 1.375 09-Jun-2026 '26 MTN	0.14%	0.15%	0.15%	0.17%	0.18%	0.20%
AIR 1.625 09-Jun-2030 '30 MTN	0.17%	0.18%	0.18%	0.20%	0.22%	0.24%
AIR 2.375 09-Jun-2040 '40 MTN	0.19%	0.21%	0.21%	0.23%	0.25%	0.28%
Kd	**2.05%**	**2.12%**	**2.12%**	**2.06%**	**2.03%**	**2.06%**

Bond Outstanding	Amount Outstanding	Coupon rate
USD Bond 10Y	878,503,031	2.7%
EMTN 10Y	1,000,000,000	2.39%
EMTN 15Y	500,000,000	2.2%
EMTN 10Y	600,000,000	1.0%
EMTN 15Y	900,000,000	1.5%
Exchangeable bonds 5Y	1,077,900,000	1.4%
USD Bond 10Y	658,877,273	3.2%
USD Bond 30Y	658,877,273	4.0%
AIR 1.625 07-Apr-2025 '25 MTN	750,000,000	1.63%
AIR 2.000 07-Apr-2028 '28 MTN	750,000,000	2%
AIR 2.375 07-Apr-2032 '32 MTN	1,000,000,000	2.38%
AIR 1.375 09-Jun-2026 '26 MTN	1,250,000,000	1.38%
AIR 1.625 09-Jun-2030 '30 MTN	1,250,000,000	1.63%
AIR 2.375 09-Jun-2040 '40 MTN	1,000,000,000	2.38%
Total	**16,524,157,577**	

Cost of Equity

The Cost of Equity was computed using a Capital Asset Pricing Model (**CAPM**) variant, considering the Country Risk Premium, given that AIR is a multinational firm operating under several jurisdictions and sensitive to global risks.

$$\boldsymbol{Ke = RFR + (\beta * MRP) + CRP}$$

Risk-Free Rate: The German 10Y Government Bond was considered for the forecast period. It was computed as the last 5-year monthly average yield.

Beta: The computed Beta results from the Blume Adjustment to the Beta, which obtained through a regression between the last 5 years' daily prices of AIR and CAC40 until 30thJune 2020.

Market Risk Premium (MRP): A selected range of countries from all the Geographical segments was selected to compute the MRP based on its historical importance for the A&D considering the volume of orders. The MRP for each country was retrieved from the (Fernandez, Martinez, & Acín, 2019) paper. The following step was to compute an average of the individual MRP for each geographic segment and the concluding step was to multiply these last values times the 2019 Revenues' share of each segment.

Country Risk Premium (CRP): The CRP was computed in the same way as the MRP, although the data was collected from Damodaran Database.

	MRP	CRP
Europe		
Germany	5.7%	0.0%
France	6.0%	0.7%
Netherlands	6.0%	0.0%
Spain	6.4%	2.4%
UK	6.2%	0.7%
Total	**6.1%**	**1.2%**
North America		
USA	5.6%	0.0%
Canada	5.8%	0.0%
Total	**5.7%**	**0.0%**
Asia-Pacific		
China	7.5%	1.0%
India	8.3%	3.2%
Japan	6.1%	1.0%
South Korea	6.6%	0.7%
Total	**7.1%**	**1.9%**
LATAM		
Brasil	8.2%	4.4%
Argentina	14.9%	17.6%
Chile	6.3%	1.0%
Colombia	7.7%	2.8%
Total	**9.3%**	**0.7%**
Middle East		
UAE	7.4%	0.7%
Qatar	6.8%	0.9%
Saudi Arabia	7.0%	1.0%
Total	**7.1%**	**0.3%**
Other Countries		
Ethiopia	13.3%	8.1%
Russia	8.5%	3.2%
Total	**10.9%**	**0.7%**

Cost of Equity	FY21 F	FY22 F	FY23 F	FY24 F	FY25 F
Ke	**9.74%**	**9.74%**	**9.74%**	**9.74%**	**9.74%**
Rf	0.11%	0.11%	0.11%	0.11%	0.11%
MRP	6.82%	6.82%	6.82%	6.82%	6.82%
CRP	1.10%	1.10%	1.10%	1.10%	1.10%
Adjusted Levered Beta	1.25	1.25	1.25	1.25	1.25

WACC: For the WACC computation, the Market Value of Equity, and the Book Debt as a proxy for market values were used. The income tax rate for each year is mentioned in the Income **Appendix 4**.

$$\boldsymbol{WACC = \frac{E}{V} * Ke + \frac{D}{V} * Kd * (1 - t)}$$

WACC	FY21 F	FY22 F	FY23 F	FY24 F	FY25 F
Ke	10%	10%	10%	10%	10%
Kd	2.1%	2.1%	2.1%	2.0%	2.1%
D	13,831	13,745	12,928	11,989	11,345
E	49,686	49,686	49,686	49,686	49,686
V	63,517	63,431	62,614	61,675	61,031
t	24%	24%	24%	24%	24%
WACC	**8.0%**	**8.0%**	**8.1%**	**8.1%**	**8.2%**

Terminal Growth Rate (**g**): This rate was computed as the average Geographic segment forecast GDP growth rate for the upcoming decades, based on OECD and IMF outlook projections until 2040. The original outcome was a g of 2.8%. However, due to the COVID pandemic AIR main customers, the Airliners are restructuring their operations and optimizing the fleet, which means several of them have already postpone or even cancelled aircraft orders. Consequently, a 25% discount was applied to the original terminal growth, shrinking it to **2.08%.**

For the FCFE, the g will have an upward adjustment from the benefits of leverage and is forecasted at **2.48%** (+0.4 pp).

Region	%Revenue	GDP Growth TV (%	Weighted GDP
Asia/Pacific	36.1%	4.4%	1.6%
Europe	31.1%	1.5%	0.5%
North America	16.1%	2.1%	0.3%
Middle East	9.4%	2.6%	0.2%
Latin America	2.0%	2.8%	0.1%
Other	5.3%	2.0%	0.1%
g			**2.8%**
Discount Factor			25%
Terminal Growth rate			**2.1%**

Appendix 13 – Absolute Valuation Methods

Free Cash Flow to Firm (**FCFF**):

$$FCFF = EBIT(1-t) \pm Non\ Cash\ Charges - CAPEX - \Delta NWC$$

Period	0.5	1.5	2.5	3.5	4.5	4.5
in Mio €	**FY21 F**	**FY22 F**	**FY23 F**	**FY24 F**	**FY25 F**	**TV**
EBIT*(1-t)	124	1,564	2,370	3,008	3,651	
NOPAT	**124**	**1,564**	**2,370**	**3,008**	**3,651**	
Non-cash charges (+)	2,335	2,599	2,521	2,506	2,644	
Δ NWC	(1,924)	(3,758)	1,025	2,064	1,052	
CAPEX	(1,701)	(2,125)	(2,245)	(2,450)	(2,718)	
FCFF	**(1,166)**	**(1,720)**	**3,671**	**5,129**	**4,630**	**77,036**
FCFF Margin	**-3.0%**	**-3.8%**	**6.5%**	**8.6%**	**7.5%**	

Perpetual Growth	**2.1%**
Enterprise Value	**61,505**
Net Cash (debt)	(2,986)
Minority Interest	-
Equity Value	**58,519**
Shares Outstanding	782
Price per Share at 30 June 2021	**74.81 €**

Free Cash Flow to Equity (**FCFE**):

$$FCFE = NI \pm Non\ Cash\ Charges - \Delta NWC - CAPEX + Net\ Borrowings$$
$$Net\ Borrowings = New\ Debt\ Issued - Debt\ Repayment$$

Period	0.5	1.5	2.5	3.5	4.5	4.5
in Mio €	**FY21 F**	**FY22 F**	**FY23 F**	**FY24 F**	**FY25 F**	**TV**
NI	56	1,524	2,355	3,017	3,669	
Non-cash charges (+)	2,335	2,599	2,521	2,506	2,644	
Δ NWC	(1,924)	(3,758)	1,025	2,064	1,052	
CAPEX	(1,701)	(2,125)	(2,245)	(2,450)	(2,718)	
Net Borrowings (+)	(4,583)	(86)	(818)	(939)	(644)	
FCFE	(5,817)	(1,846)	2,838	4,199	4,003	56,563
FCFE Margin	*-12.8%*	*-3.3%*	*4.7%*	*6.8%*	*6.1%*	

Perpetual growth	**2.5%**
Equity Value	**37,995**
Shares Outstanding	782
Price per share	**48.57 €**

Adjusted Present Value (**APV**) method:

$$APV = NOPAT \pm Non\ Cash\ Charges - \Delta NWC - CAPEX + Interest\ Tax\ Shield$$

Period	0.5	1.5	2.5	3.5	4.5	4.5
in Mio €	**FY21 F**	**FY22 F**	**FY23 F**	**FY24 F**	**FY25 F**	**TV**
EBIT*(1-t)	124	1,564	2,370	3,008	3,651	
NOPAT	**124**	**1,564**	**2,370**	**3,008**	**3,651**	
Non-cash charges (+)	2,335	2,599	2,521	2,506	2,644	
Δ NWC	(1,924)	(3,758)	1,025	2,064	1,052	
CAPEX	(1,701)	(2,125)	(2,245)	(2,450)	(2,718)	
FCFF	**(1,166)**	**(1,720)**	**3,671**	**5,129**	**4,630**	**75,663**
FCFF Margin	**-3.0%**	**-3.8%**	**6.5%**	**8.6%**	**7.5%**	
Tax rate	24.4%	23.9%	23.9%	23.9%	23.9%	
Interest paid	237	237	213	189	189	
Interest tax shield	**58**	**57**	**51**	**45**	**45**	**739**

Perpetual Growth (Kd)	**2.1%**
Enterprise Value	**60,315**
PV Interest Tax Shield	729
Equity Value	**61,044**
Shares Outstanding	782
Price per Share at 30 June 2021	**78.04 €**

Dividend Discount Model (**DDM**):

Concerning the DDM, a 3-stage Model was applied with the H-Model for the terminal period. Due to the COVID, internal and external drivers lead AIR to slash its production rates for the upcoming years, meaning that less deliveries will lead to lower revenues. The valuation model predicts that AIR will return an active Payout Policy on 2022YE, as the demand drivers will upscale AIR operations. The Short-term growth rate (gS) of 20% is the average YoY growth verified in DPS between 2012 and 2018, while the long

term growth rate (gL) is 2% which corresponds to a lower rate than the FCFF terminal growth as the Company wants the Payout Ratio to ideally range between 30% to 40%.

DDM	2021	2022	2023	2024	2025	TV
Period	0.5	1.5	2.5	3.5	4.5	4.5
EPS	0.07 €	1.95 €	3.01 €	3.86 €	4.69 €	
DPS	- €	0.78 €	0.93 €	1.12 €	1.34 €	26.81 €
DPS PV	- €	0.68 €	0.74 €	0.81 €	0.88 €	17.65 €

Inputs	
DPS 2025F	1.34 €
H (6 years)	3
Long-term Growth (gL)	2%
Short-term Growth (gS)	20%
TV	26.81 €
PV DPS	3.10 €
PV TV	17.65 €
Price Target	**20.75 €**

Appendix 14 – Relative Valuation through Multiples

Company	Country	EV/EBITDA	EV/Sales	P/E Last FY	EV/FCFF Last FY	P/Sales	P/B
Safran SA	France	12.46x	1.81x	17.78x	20.79x	1.71x	3.48x
BAE Systems PLC	UK	8.38x	1.37x	11.75x	20.55x	0.82x	2.35x
Thales SA	France	9.23x	1.03x	13.17x	14.19x	0.94x	3.16x
MTU Aero Engines AG	USA	18.59x	2.00x	18.08x	95.05x	1.97x	3.91x
Boeing Co	USA	23.59x	1.35x	0.00x	0.00x	1.22x	-13.46x
General Dynamics Corp	USA	11.40x	1.16x	12.80x	25.47x	1.09x	3.54x
Northrop Grumman Corp	USA	13.91x	1.60x	26.05x	61.55x	1.51x	6.51x
Lockheed Martin Corp	USA	12.46x	1.66x	18.00x	35.99x	1.70x	36.39x
Raytheon Technologies Corp	USA	8.87x	1.32x	9.65x	28.98x	1.22x	2.53x
Average		**14.31x**	**1.49x**	**14.14x**	**37.82x**	**1.35x**	**7.73x**
Median		**12.46x**	**1.47x**	**13.17x**	**27.23x**	**1.22x**	**3.51x**

Note: The P/B ratio does not include Boeing's figures.

EV/FCFF	FY21 F
Airbus FCFF	(1,166)
Average Peers' EV/FCFF	37.82x
EV by Peers estimates	**(44,092)**
Net Debt	2,986
Equity by Peers Estimate	**(47,079)**
Shares Outstanding	782
Share Price	**- 60.19 €**

Price to Book (P/B)	FY21 F
AIR Equity BV/ share	- 0.59 €
Average Peers' P/B	7.73x
Share Price	**- 4.55 €**

Price to Earnings	FY21 F
Airbus EPS	0.07 €
Average Peers' P/E	14.14x
Share Price	**1.01 €**

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Recommendation System

Level of Risk	SELL	REDUCE	HOLD/NEUTRAL	BUY	STRONG BUY
High Risk	0%≤	>0% & ≤10%	>10% & ≤20%	>20% & ≤45%	>45%
Medium Risk	-5%≤	>-5% & ≤5%	>5% & ≤15%	>15% & ≤30%	>30%
Low Risk	-10%≤	>-10% & ≤0%	>0% & ≤10%	>10% & ≤20%	>20%